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PAXTON'S
MAGAZINE OF BOTANY,
AND
REGISTER OF FLOWERING PLANTS.

"Flowers of all hue."

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VOLUME THE THIRTEENTH.

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TO

HER GRACE THE DUCHESS OF BEDFORD,

WHO HAS HONOURED OUR WORK

WITH THE SANCTION OF HER ESTEEMED PATRONAGE,

THE OPPORTUNITY OF DEDICATING

This Thirteenth Volume

OF

THE MAGAZINE OF BOTANY,

IS CHEERFULLY EMBRACED

BY

HER GRACE'S MOST HUMBLE AND GRATEFUL SERVANT,

JOSEPH PAXTON.

ADVERTISEMENT.

Devoted as this Magazine is to a particular department of a science, and confined to treating of what relates directly and indirectly to that department, it were no wonder if a certain sameness of character could be traced in its now numerous volumes. But that this does not exist, even to the extent that might have been expected, or beyond a degree which it is impossible to avoid, we have pleasure as well as confidence in asserting. And the privilege of many years' acquaintance with our indulgent Patrons, with the determination we have formed to present ourselves under a similar aspect to them in another volume, induce us thus to speak.

Of the position to which the public have long ago elevated us, and the way in which we are maintained there, we have just reason to be proud; but desire to be so only because it enables us to aid in creating and cherishing a taste for a delightful pursuit, which happily continues to furnish unmistakeable evidence that it is followed by increased and widely-spreading zeal.

The volume now concluded, as those which preceded it have done, and as we intend any future ones to do, must speak for itself. Indeed, with merely observing that we have aimed to fill it with portraits of as many new and beautiful flowers as possible, and to render its letter-press more practical, and therefore more useful, we shall leave it to explain and establish its own claim to merit.

Our commencement of another Magazine year and progress through it will be found, we venture to assure our readers, as satisfactory as in any they have accompanied us through. With this assurance, therefore, and the acknowledgment of our great obligations to them and all our friends, we shall take leave till we meet them after we have commenced the fulfilment of our promise, and begun anew to evince our gratitude.

Chatsworth,
December 19*th*, 1846.

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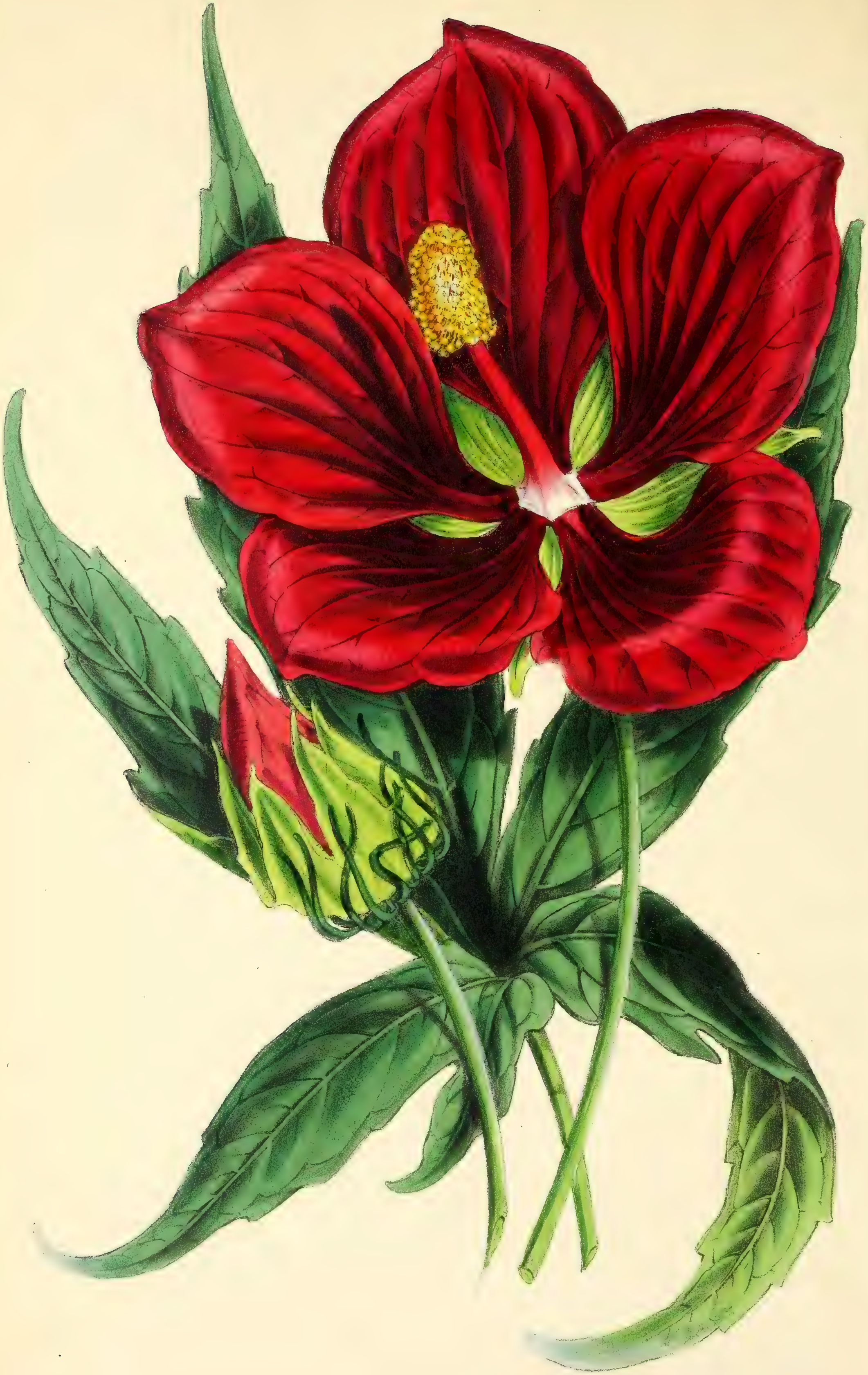

S. Holden, del & Lith.

Hibiscus Jerroldii.

HIBÍSCUS JERROLDIÀNUS.

(Mr. Jerrold's Hibiscus.)

Class.
MONADELPHIA.

Order.
POLYANDRIA.

Natural Order.
MALVACEÆ.

GENERIC CHARACTER.—*Calyx* compressed by a many-leaved, rarely by a few-leaved involucel, sometimes connected at the base. *Petals* not auricled. *Stigmas* five. *Carpels* joined into a five-celled, five-valved capsule, with a dissepiment in the middle of each valve on the inside. *Cells* many-seeded, rarely one-seeded.

SPECIFIC CHARACTER.—*Stem* herbaceous, unarmed, of rapid growth, somewhat glaucous. *Leaves* digitate, usually of five lanceolate, acuminate lobes, which are sometimes irregularly and deeply toothed on the margins, quite smooth: petiole very long. *Flowers* axillary, rich crimson, solitary, on long peduncles. *Peduncles* longer than the petioles. *Involucel* of from twelve to nineteen narrow tapering leaflets. *Petals* spreading, much narrower, and thickened towards the base, also clothed there with white hairs. *Column* rich crimson. *Anthers* yellow. *Stigmas* five.

NOTHING in the large Conservatory at Chatsworth, through the season in which their flowers are expanded, elicits more universal admiration than the various species of *Hibiscus*. Planted in the borders, each specimen fully developes its natural character, flowering in the most profuse splendour the greater part of the summer and autumn.

Some of the species grow most luxuriantly, attaining the dimensions of large trees; a greater number exhibit a less exuberant growth, forming most interesting objects; others are herbaceous, attracting attention by their tall, slender stems, and strikingly large, gaudy flowers.

Our present subject is allied to those of the last description: it was raised in the spring of 1843, from seeds gathered in the Brazils by Dr. Lippold, and presented to his Grace the Duke of Devonshire, by Mrs. Berry. It is herbaceous, and, planted in the situation before mentioned, then forms handsome specimens, varying from four to nine feet in height, composed of numerous shoots, well clothed from the bottom upwards with their fine palmate foliage, and freely developing for a long period their splendid crimson flowers.

Considered botanically it belongs to the section Manihot, the third division of the genus.

The majority of the *Hibiscus* family requiring a stove temperature to develop the properties which render them valuable, and also a greater space to permit their being seen to advantage than can generally be spared, they are not so universally cultivated as the magnificence of their flowers entitle them to be. Although decidedly more at home in the conservatory borders, many of the species are highly ornamental when cultivated in pots ; and the perfectly beautiful objects they become when planted out, furnishes a ready clue to the kind of treatment they ought to experience. The main point to keep in view when growing them in pots is to subject the plants to such conditions as will ensure a free and unchecked growth. The necessity of doing this will be obvious, when it is recollected the flowers are always produced from the annually forming shoots.

H. Jerroldianus requires the temperature of the stove, a lower than which hinders the healthy expansion of its blooms, and prevents their coming to perfection. If in the spring it is induced to commence growing early, it will flower a much longer time than when otherwise treated. A rather rich soil will be found most suitable, such as one composed of loam, leaf-mould, and rotten dung; well incorporated.

The best method of propagation is by division of the roots in spring; it can be increased by cuttings and seeds, but the latter under cultivation are not freely produced, and cuttings do not readily strike.

The generic name is derived from a Greek word for *Mallow*, and the specific we give in compliment to our esteemed friend, Mr. Douglas Jerrold, with whom, as an author, every one must be familiar.

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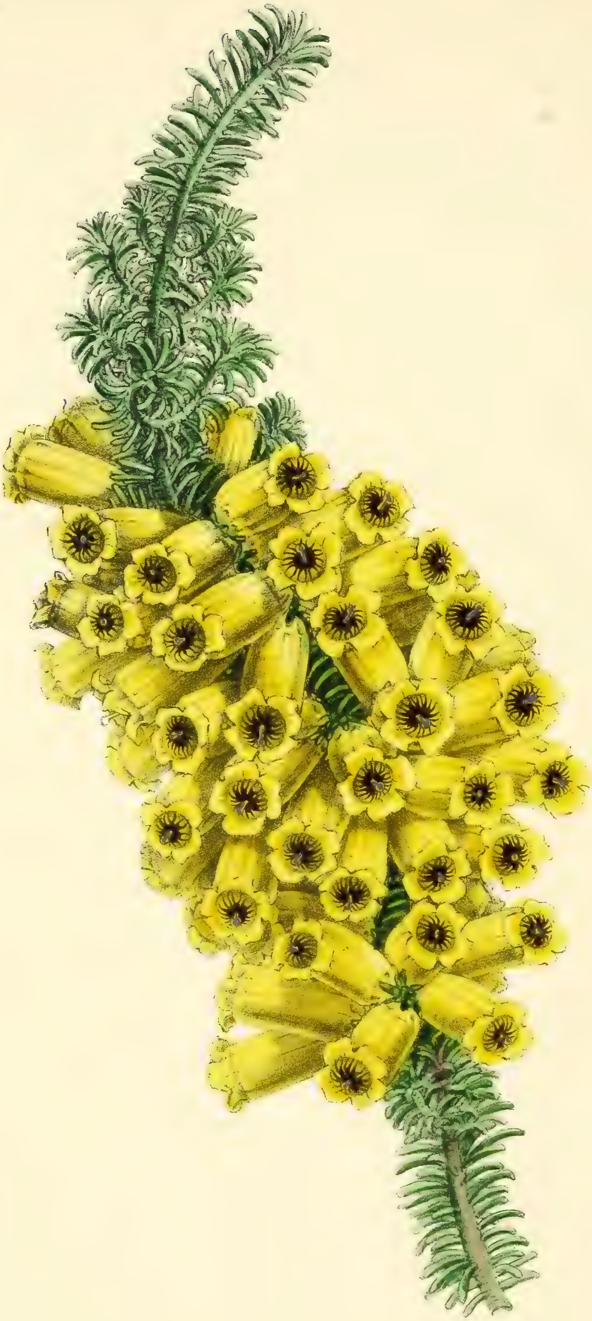


S. Holden, del & Lith.

Erica Cavendishii.

ERÌCA CAVENDISHIÀNA.

(The Duke of Devonshire's Heath.)

Class.
OCTANDRIA.

Order.
MONOGYNIA.

Natural Order.
ERICÀCEÆ.

Generic Character.—*Calyx* four-parted, inferior. *Corolla* with four divisions. *Stamens* inserted in the receptacle. *Anthers* bifid. *Capsules* four-celled, many-seeded.

Specific Character.—*Plant* an evergreen shrub. *Stem* erect, *branches* spreading. *Leaves* four in a whorl, linear, with revolute margins, glabrous. *Flowers* terminal on the lateral shoots, two to four together, drooping, yellow. *Bracteas* close to the calyx. *Corolla* with an oblong, somewhat inflated tube. *Stamens* inclosed; anthers with long subulate awns.

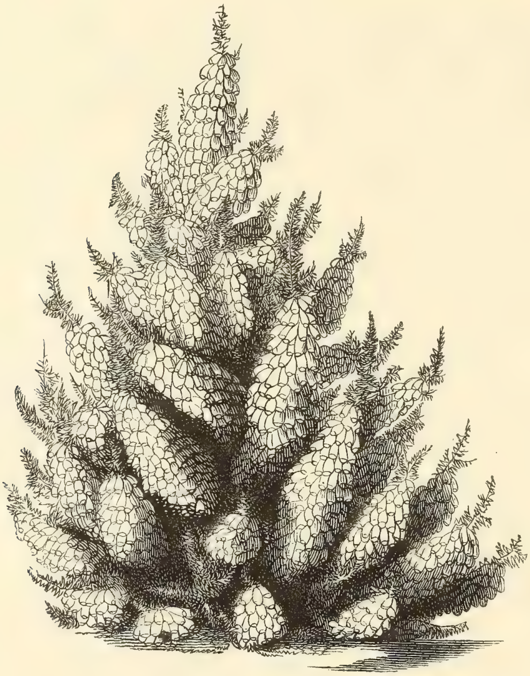
Large plants of this magnificent Heath have been exhibited within the last two or three years at most of the great metropolitan floral fêtes. It is one of the many examples which our gardens and greenhouses now afford of the improvement which art is capable of conferring upon the wild productions of nature, by uniting the beauties of different species through cross-fecundation.

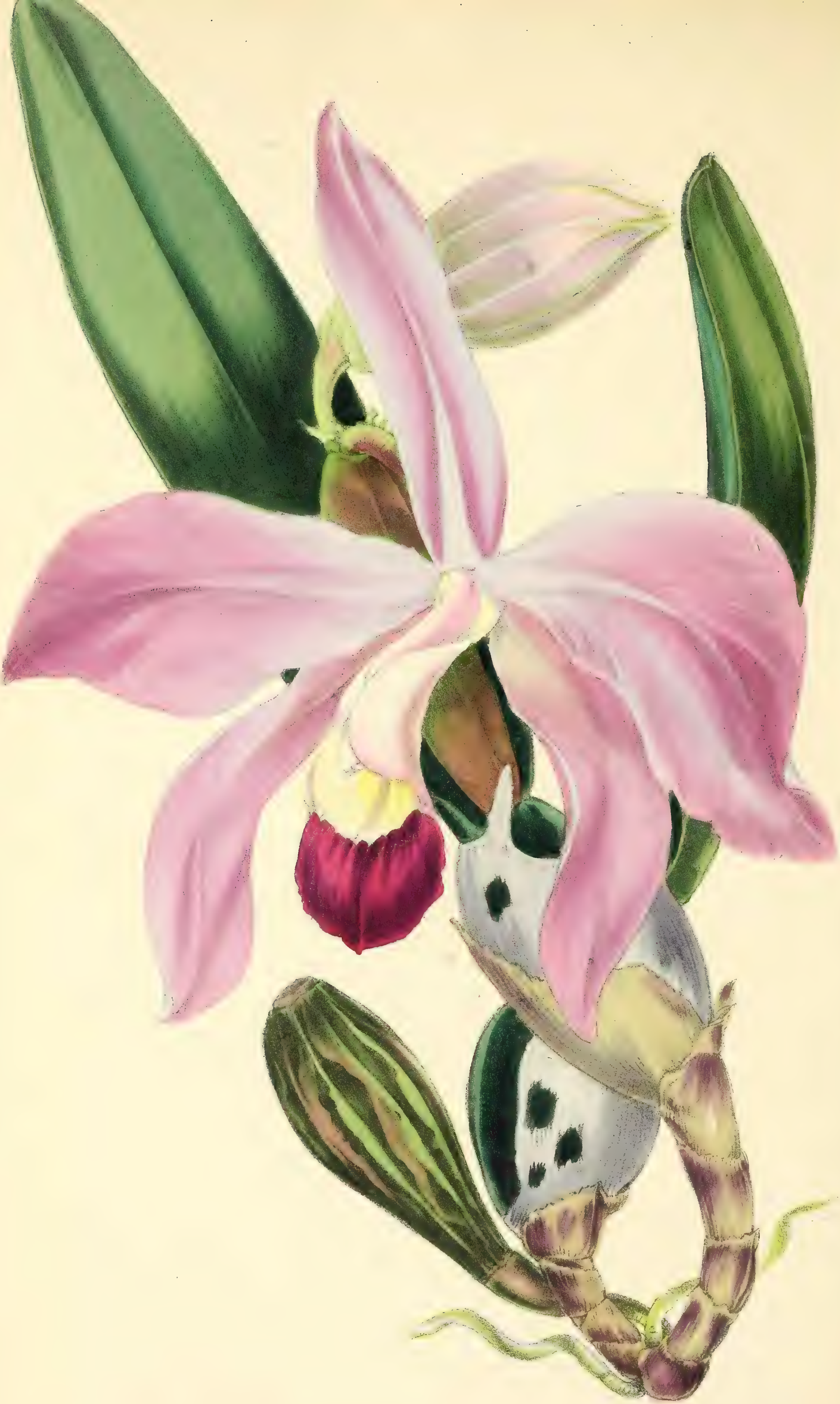
It originated about eight years ago in the nursery of Messrs. Rollisson and Sons, at Tooting, who have long been famous for their superior management of the genus. The seeds from which it sprung were produced by *E. depressa*, fertilised with the pollen of *E. Patersonii*. It inherits many of the characteristics of the seed-bearing parent, but differs from it in possessing a more robust habit, in its greater rapidity of growth, and the brighter yellow of its blossoms. Besides these, it may be distinguished by the strong upright main branches from which short lateral shoots issue on every side, each ending with from two to four flowers, altogether forming a complete pyramid of blossom. *E. depressa*, on the other hand, has decumbent branches, with much longer lateral growths; the flowers consequently are not arranged pyramidally, but appear more scattered, and less showy. In addition to the foregoing distinctions, there are several minor points of variance, by which they may be distinguished from each other, amongst which we may instance the greater length and tenuity of the foliage of our subject, and its anthers having somewhat longer awns or spurs at the base than those of its parent.

Specimens of this variety may be soon produced of a considerable size by encouraging treatment. The flowers are developed from May till the end of July, and that in the utmost abundance; hence it forms an excellent sort for exhibitors, as well as for the ordinary decoration of a greenhouse. In common with others of the more robust quick-growing kinds, it is well adapted for window culture: and seeing that this tribe of plants are now managed with so little difficulty, and are easily preserved in a healthy state in a cottage window, we have no doubt they will soon become still more popular than they are, even now.

The coloured lithograph and woodcut illustration were prepared from a specimen in the collection of Messrs. Fairbairn, of Clapham Rise, in July.

The specific name was awarded by Messrs. Rollisson and Sons, in compliment to his Grace the Duke of Devonshire.





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Laelia Perrinii.

LÆ̀LIA PERRÍNII.

(Mr. Perrin's Lælia.)

Class.
GYNANDRIA.

Order.
MONANDRIA.

Natural Order.
ORCHIDÀCEÆ.

GENERIC CHARACTER.—*Sepals* spreading flat, lanceolate, equal. *Petals* large, slightly dissimilar in form. *Labellum* three-parted, lamellate, over-wrapping the column. *Column* wingless, fleshy, front surface channelled. *Anthers* eight-celled. *Pollen-masses* eight. *Caudiculæ* four, elastic.

SPECIFIC CHARACTER.—*Plant* an Epiphyte. *Leaves* oblong, coriaceous. *Sepals* oblong, linear, obtuse. *Labellum* oblong-lanceolate, three-lobed, clawed, naked; lateral lobes erect, acute; middle one oblong, undulated, obtuse.

SYNONYMES.—*Cattleya Perrinii, Cattleya intermedia, var. angustifolia.*

"THE genus 'Lælia' may be regarded as one of the most ornamental of its tribe, since pleasing colour, graceful habit, long duration, and delicate perfume, in short, all the essentials of floral beauty, seem to be combined in its various species." Thus writes Mr. Bateman in his magnificent work on the *Orchidaceæ* of Guatemala and Mexico. L. Perrinii is a native of Brazil; and, except in point of habit, fully supports the superior, but just character, given to its genus by the above quoted gentleman.

Until the present, a figure of it has not appeared as *Lælia Perrinii*. Dr. Lindley, in the "Bot. Reg.," published it as *Cattleya Perrinii,* afterwards referring it to the present genus. A plate of it has also been given in the "Bot. Mag." as *Cattleya intermedia, var. angustifolia,* Sir J. W. Hooker then considering it not specifically distinct from *C. intermedia.* Its whole habit is similar to that of a *Cattleya,* which it would be, states Dr. Lindley, if it had not eight pollen-masses.

A striking feature in its beautiful delicate coloured flowers is the remarkable distinctness of their colours. This trait is the more interesting, as distinguishing it from some of its kindred species, which are in every respect faultless, except having the colours in their flowers running into each other, and mingling together in a manner that diminishes from their otherwise great excellencies.

In some specimens which have come under observation, the original pseudo-bulbs, formed previously to their being imported, were of a most singular shape, their main substance being concentrated in a broadly pear-shaped, much flattened mass, gradually diminishing into a small stem at the base. Under cultivation this peculiarity is gradually lost; the pseudo-bulbs becoming, as described by Dr. Lindley, "club-shaped."

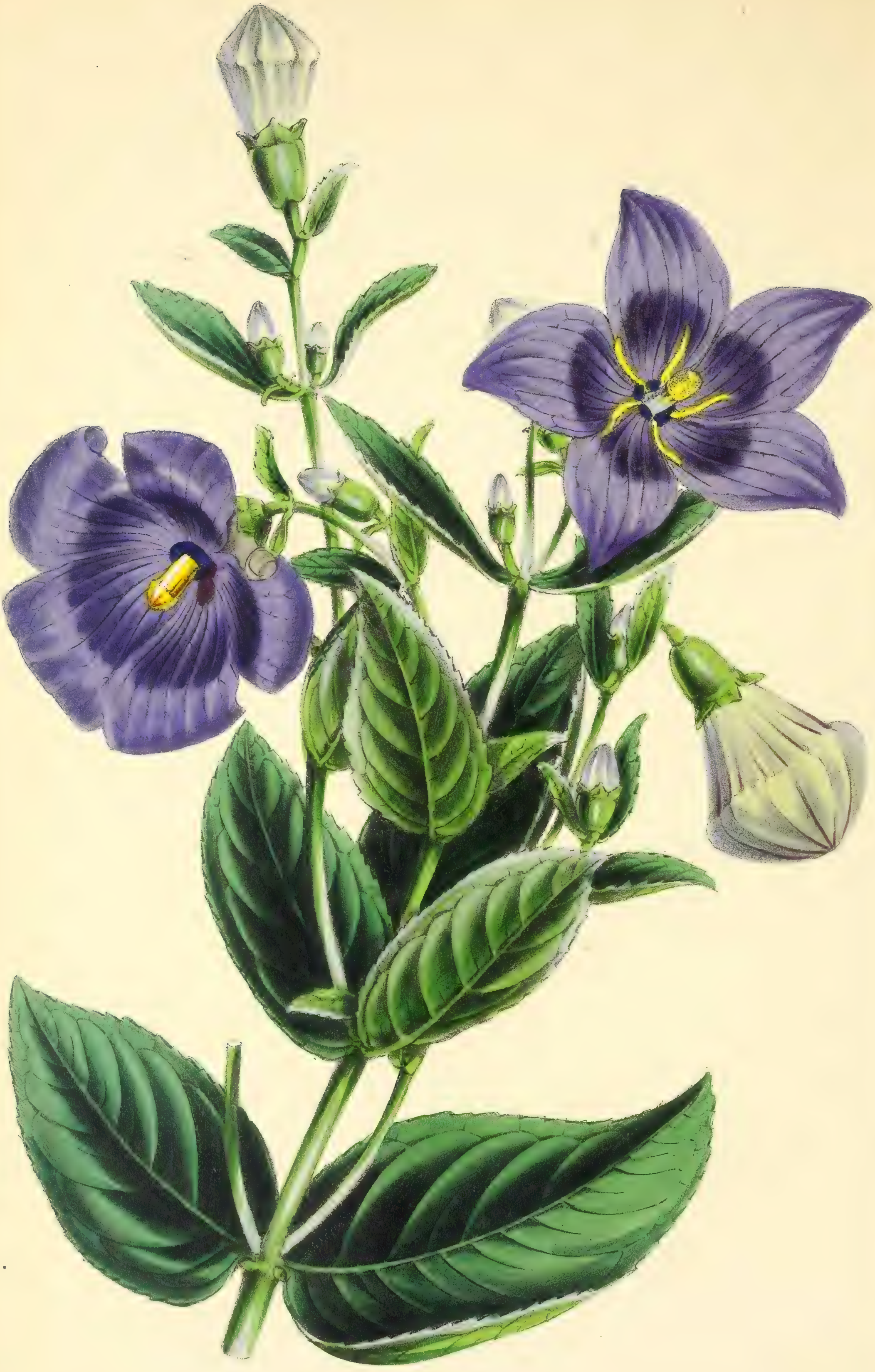
Unless the genus *Lælia* and their rivals, the Cattleyas, are successfully cultivated, they scarcely possess any degree of interest. Some species singularly refuse surrendering to any endeavour to induce them to flower. With respect to these last, it is a fact that is sometimes overlooked, that the various practices resorted to, with a view to effect their flowering, often completely exhaust the individuals operated upon. The only resource, under such circumstances, is to place the plant where it may gradually recover its energies by being permitted to rest. None should be expected to flower which are not in vigorous health.

The greater part of the members of each genus love a high moist temperature when growing; favouring them with the usual conditions when they are in the opposite state.

L. Perrinii is most easily cultivated, succeeding well potted in sandy peat and potsherds, kept cool and dry when at rest, in a temperature of 45 degrees: and when growing liberally supplied with water, and submitted to moist heat of 80 degrees, shading from hot sun.

The specific title compliments Mr. Perrin, Gardener to R. Harrison, Esq. Mr. P. is a successful flowerer of South American Epiphytes.

To the kindness of the Messrs. Knight and Perry, of the Exotic Nursery, Chelsea, we are indebted for our drawing; it was obtained in their establishment in November, 1843.



S Holden del & Lith.

Platycodon grandiflorum.

PLATYCODON GRANDIFLORUM.

(Great-flowered Platycodon.)

Class.
PENTANDRIA.

Order.
MONOGYNIA.

Natural Order.
CAMPANULACEÆ.

Generic Character.—*Calyx* five-cleft. *Corolla* five-lobed at the apex, large, funnel-shaped. *Stamens* five, free; filaments broadest at the base. *Stigmas* three to five. *Capsules* three to five-celled, dehiscing by three to five valves at the apex, which are septiferous in the middle; cells, when five, alternate with the calycine lobes and stamens. *Seeds* ovoid, larger than in any genus of the order, shining, but not angular. *Leaves* alternate or nearly opposite, sessile, of a middle size; upper ones the smallest. *Flowers* few, terminal, solitary, pedunculate.

Specific Character.—Plant quite glabrous, glaucescent. *Leaves* ovate, lanceolate, coarsely serrated. *Corollas* large, somewhat five-cleft, deep blue. *Stigmas* five, five-celled. *Stems* simple. *Peduncles* terminal.

Synonymes.—*Campanula grandiflora; C. gentianoides. Wahlenbergia grandiflora.*

The name accompanying the annexed plate, is applied by Dr. Lindley to a plant recently introduced to the country, through the Horticultural Society of London. Mr. Fortune, who was sent out by the Society to China, as Collector, forwarded it from thence.

Many differ from Dr. Lindley in considering it *identical* with the old *Campanula* or *Wahlenbergia grandiflora,* which is synonymous with *Platycodon grandiflorum.*

Our drawing was prepared from a plant grown by Mr. W. P. Ayres, Gardener to J. Cook, Esq., of Brooklands Park, Blackheath, Kent. The history of the plant in question, which may be considered a type of all now in the country, with an account of its treatment up to the time it produced flowers, is contained in the following extract from a letter received from Mr. A., who states, "I received the plant from the garden of the Horticultural Society, early in the spring of last year, under the mark of Beautiful Campanulacea, from China, and it was at that time a mere speck, not more than the eighth of an inch long. For some time I doubted whether I should be able to induce it to start, but at last, by being kept in the plant stove, it began to grow. It was then shifted from a two, to a five-inch pot, in a mixture of very fibrous loam, intermixed with half decomposed leaf-mould, and a little sharp sand; and as soon as it was established, it was removed into a nine-inch pot, using the same compost, with an admixture of small charcoal. It was kept in the stove at a brisk growing temperature, with plenty of moisture, until the first flower expanded; at which time it was removed to the greenhouse, where it continued flowering for several weeks.

"I may remark, that during the early part of its growth, it showed no disposition to branch: but when the leading shoot was picked out, it immediately branched and produced flowers. It strikes readily by cuttings in agreeable heat."

Platycodon is a genus composed of plants, separated from that of *Campanula. P. grandiflorum,* formerly cultivated in gardens, but since lost to the country, was a dwarf, hardy, herbaceous plant, bearing deep blue flowers, similar in their shape to those of *Campanula persicifolia.*

The present species for the most part has been grown under glass: it consequently has not experienced the severity of our winters. The colour of its flowers is not of that deep blue, represented by some drawings of the original *P. grandiflorum.*

Platycodon is derived from *platys,* broad, and *kodon,* a bell; in reference to the shape and breadth of the flowers.

APPLICATION OF HEAT.

As from the extraordinary character of the weather throughout an entire year, commencing with November, 1844, it was judged right to offer remarks upon the peculiar phenomena of that period on more than one occasion, it now does not appear irrelevant to take a cursory notice of the last month which has closed the year 1845; and particularly, as no greater contrast could be imagined, than that presented by the two Decembers of the years alluded to. When we reflect upon the irregular vicissitudes of season in our insular climates, we perceive the futility of all prognostications which are founded upon *regular* planetary movements. The moon is known to perform its rotations in certain definite periods; yet how fallible is every prediction which takes for its foundation the lunar phases!

Let us only retrace the whole of December, 1844, and consider its fierce cold, its gloom, its fogs, its almost entire absence of rain, even in the smallest quantities, the general paucity of sunlight; and then compare a meteoric condition so extraordinary, with that of the month just elapsed. The result, we opine, will be the abandonment of predictions, and the substitution of a theory which refers all meteoric transitions, mutations, and irregularities, to certain electro-magnetic disturbances in the air, and below the surface of the earth, which change the condition of water and watery vapour, in a manner not discernible or appreciable by instruments, yet arbitrary and local to a degree perfectly surprising. In fact, it is scarcely safe to quote the weather or temperature of any locality, since it is notorious that according to tables founded upon instrumental observations, in places not remote from each other, and close to the metropolis, the given results are so opposed, as to lead to no correct conclusions whatsoever.

When therefore we state, that, throughout the past month we have observed and registered only seven rimy frosts, with not one entire day wherein the instrument descended so low as thirty-five degrees at its maximum; that there were twenty days in which rain fell more or less, and on several occasions in very great profusion; and, nevertheless, that the sun has frequently been brilliant as in March, and the mid-day temperature genial as in spring, we can only claim credence of the facts as purely local. The point of interest is simply this—that while all must admit the regularity and beautiful harmony of the planetary movements; the concurrence of four (rarely five) monthly lunations; the all-but precisely corresponding length of days and nights, and the identity of solar altitude—we find two seasons, at exactly the same periods of the year, totally at variance in every important meteoric phenomenon!

These remarks are penned on the first days of the new year, when the open garden presents primroses of various colours in bloom, or expanding their blossoms; oxlips, particularly strong and highly tinted; violets quite redolent of odour: and among exotics,—beautiful China roses, the Cydonia Japonica covered with blossom, Berberis aquifolia protruding bloom-buds, and horse-shoe Pelargoniums scarcely touched by frost. What a contrast to the parched and lifeless blank of December, 1844!

Yet, with all this charming opening beauty, the new year may bring with it a repetition of the more than Siberian asperity of 1838, when, after a Christmas season mild as May, the frost set in on the 4th of January, and continued to advance till it reduced the mercury from two to four degrees; and, as some stated, eight or more degrees below zero! Frost has now, in fact, commenced, though mildly; and with this remark, which may be proved of some consequence ere this paper meets the reader's eye, we come at once to the subject that claims particular notice at the approaching season of the year:—

Occasions have offered themselves wherein the operations of forcing and protection have been dwelt on with some interest. The modes of heating have always appeared more or less objectionable, whether on the ground of wastefulness and want of power in the fuel, or of irregularity in the irradiation and distribution of heat. At length, however, a furnace has been discovered which appears to combine every appliance and advantage contended for. It is not exactly new, neither is it secured or restricted by patent, yet it does not appear to be much known at present.

From the form of the apparatus it has been called the *Saddle* boiler; and, so far as we may judge from repeated observation during the erection of a new propagation-house, it appears to possess every required quality for the radiation and perpetuation of heat. It consists of a double casing of cast-iron, eighteen or twenty inches long, and a foot deep from the roof, or arch, at top, to the fire-bars, both in the clear. It is of the figure of a good arched draining tile, and rests firmly upon the frame and cast-iron fire-bars, in front of which, and true to their level, is a strong iron plate, adapted so as to receive a charge of coals in front of the main body of fire. These coals become heated. The inflammable coal-gas being rarefied, expands, and passes off over the ignited red mass, in the condition of intensely heated flame; thus consuming smoke, and heating the water with extreme rapidity.

The furnace door is double, as is also the ash-pit door beneath it; this latter being furnished with a revolving valve, to admit greater or less portions of air, or to exclude it entirely, supersedes the chimney register.

The figure No. 1 exhibits the saddle boiler, *b b*, which (being of the dimensions referred to) is presumed to contain about seven gallons of water. Its appendages are, *d d*, the fire door and ash-pit door, set in brick work, and elevated a foot, or more, above the surface of the ground-level; *ex* shows the upright exit, or flow pipe; *r r*, the right and left return pipes; and *F*, the oven,or fire furnace. This last is one with the boiler, forming its internal case, and therefore in immediate contact, throughout its inner surface, with the ignited materials. The fire runs the whole length of the oven, turns over the end, round the sides, and finally passes off in front of *ex*, which it heats, entering the chimney at a point above *F*, and in front of the tube *ex*.

The figure is designed to exhibit the form and position of the oven boiler, and its principal appendages, but not by any means to portray the external fittings-up, which are indeed most complete, as they comprise two side flues, with close iron doors, by which, with little trouble, the soot that collects around the boiler, and at the entrance of the shaft, can be removed, thus avoiding future repairs or alterations. A breasting of brick work is erected, from which springs a bold arch, and upon this the chimney is supported, and thence is carried up to any convenient height. By referring to *fig.* 2, some idea will be formed of the plan of tanks through which pass the right and left return-pipes, *r r*, that convey the water through the two branches that communicate with the two sides of the boiler. *F* shows the position of the boiler in the small house that is under erection, but which cannot be minutely described in its inner details till the weather permit its completion.

fig.1.

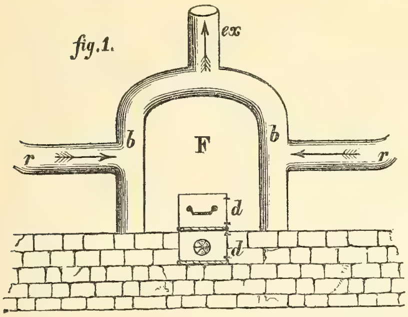
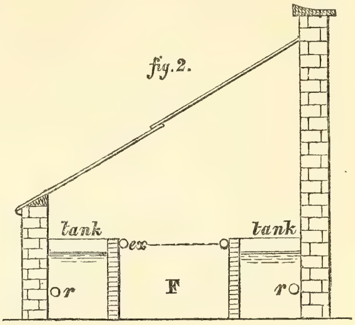


fig.2.



The plan of *fig.* 2 is by no means arbitrary, for it manifestly admits of many deviations. The apparatus it includes is fully adequate to warm a large house, either with or without a single or double tank. The four ranges of three-inch bore cast-iron pipes, which pass around the walls and down the middle, as above shown, excite an atmosphere of warm air that must be nearly equable throughout, and susceptible of increase or diminution by the complete regulation of the combustion provided for. The roof also may be a 'lean-to,' or simply sloped, or a *double span*, facing north and south, or south-east and north-west (which, perhaps, are the choicest aspects).

If the objection be raised, that so large a furnace (measuring above two feet in length, if we include the heating plate in front of the bars,) must require a very considerable mass of fuel, it may be met by the assertion that a small capacity requires the very best quality of coal, and frequent feedings; whereas, when a large body of fuel becomes red hot, it can be supported by cinders, and other cheap and even refuse material. So far as observation extends, the promise is most encouraging, but as we neither entertain prejudices nor prepossession, a truthful report shall be added when its heating and economising powers shall have been ascertained.

Having said so much in recommendation of the furnace above described, which till proved defective affords the highest promise of efficiency, it will be just to make some allusion to a method of heating pointed out in recent numbers of the *Gardeners' Chronicle.*

We confess, and many readers must feel, that it is no easy matter to depict, and render intelligible by plan and letter-press, the arrangement of a forcing-house. The Polmaise mode of procuring a warm and vaporous atmosphere without flues, water-channels, or tanks, is very interesting; and it is hoped will be brought to rigid and impartial trial by those who have either funds at command to render outlay a secondary consideration, or sufficient energy to undertake in confidence what may appear to promise success.

Still we must insist upon one chemical fact—and it is self-evident—namely, that fuel, in the act of combustion, can do no more than yield that volume of radiating matter, (call it *caloric*, latent heat, electrized vapour, or what you will), which is developed by some sulphuretted hydro-carbon, like *coal*, combined with a portion of *bitumen*, when brought into a state of combustion by oxygen gas.

We do not now discuss the philosophy of combustion, but certainly assume, that as there *is* a furnace connected with the drains of the Polmaise process, that the apparatus can by no means develope and distribute more heat by the circulation of heated and cool air, than it could liberate if conveyed through the media of brick flues, water-gutters, or any other channels with radiating surfaces. So far as fire is concerned, the expense cannot be thus economised; therefore, the great points at issue are, the first expense, and the permanent equalisation of a healthy renewable atmosphere. Such points, it is to be hoped, will be satisfactorily ascertained, and frankly given to the public.

As to the medium for conveying and retaining a temperate bottom-heat—(and, by the bye, where do we find its applicability at all within the compass of the Polmaise machinery?)—we must at present retain our predilection for tan, leaves, and such like decomposable substances, but solely because the chemical play of their constituent elements secures a constant stream of vivifying gases to the soil, and developing roots which experience shows to be most congenial to vegetable progress. Those decomposing materials are subject to serious objections, as they are not only productive of insects and grubs—among the most vexatious of which are the woodlice (*Oniscus*)—with which tan abounds; also again, by the attraction which their decomposition excites, to induce the roots to pass the holes of the pots and to ramify extensively in the bed.

For the purposes of propagation, therefore, we should be content with some negative substances which will neither ferment, decay, nor foster vermin; and such are nicely-washed, unbinding sand, mixed up with one third part of charcoal dust. The tank-bed ought to be six or more inches deep, and the plunging materials made to occupy the whole space to within an inch, or an inch and a half, of its top. If properly moistened and kept in that condition, a very pleasant sweet warmth will be created, and may serve every purpose of propagation.

We perceive that allusions are now made to coloured glass; and, it may be, with good reason. The subject, however, is one of some uncertainty, though it is highly probable that, as the coloured rays induce various effects—the prismatic glass appearing to separate the heating, chemical, and magnetic rays—glass shades of blue, yellow, and red tints, might produce definite results. We can only learn by wise and cautious experiments; therefore, the trials should at first be made with cuttings under hand-glasses of the several colours; the effects would speedily be discovered; and particularly with the blue glass, which, as it excludes heat, would favour the production of roots; whereas the red glass might forward the growth of those cuttings already rooted.

At present, the project is hypothetical, and rests upon the supposition that the blue ray being *magnetic* is coincident with cold, and opposed to the red, electric or heating ray.

Facts are few; but we have every promise that they will multiply, and confirm that which to a certain extent is now only conjectural.

Since this article was first penned, the mild character of January was established; there was however a great prevalence of gloom, but hardly an entire day of frost.

THE FUCHSIA AS A STANDARD.

Considerable as is the extent to which we have already written upon the *Fuchsia*, we do not deem it necessary to apologise to our readers for again introducing it to their attention, much less for the manner in which we shall do so.

We have not now to describe it, in order that it may experience the attention its merits deserve; it is so essentially necessary to the most limited collection of plants, and is so universally esteemed, that a mere allusion to the deserved popularity it enjoys, is sufficient to substantiate the object we have in view in the present paper.

It is when in flower so innately beautiful, that, whatever are the circumstances under which it is in that state seen, it is sure to attract attention and be admired. But when trained as a standard, and in that capacity beheld in full bloom, the interest with which it is viewed is greatly increased. The difficulty, however, of training it into the form that gives to it a feature at once novel and beautiful, is, we are aware, considered by many an obstacle scarcely to be overcome. We shall therefore render our article strictly practical, by giving such directions as make the object in view easy of accomplishment.

We have introduced the subject with a view to utility, as now and a month hence, to insure a reasonable chance of success, is the proper season to choose cuttings and place them where they will readily emit roots. They must be strong and full of vigour, as they will have to experience a course of treatment that weakly ones, or those of delicate constitution, could not bear. Strong sucker-like shoots from the base of plants, vigorous ones from the branches of large specimens, &c., and where any particular kind is wished to be raised into a standard, and suitable cuttings are not at hand, they may easily be procured by placing the plant in gentle heat.

It is necessary to be most particular in choosing cuttings, as nearly all the success, certainly a favourable result, depends upon a proper choice in the selection of cuttings. Those will greatly err who choose them promiscuously, taking weak small pieces, the terminal points of branches, &c., for it is indispensably necessary that, from the commencement, the plants possess a robust constitution. Chosen as just directed, shoots from four to six inches in length should be taken and struck as soon as favourable circumstances will permit, not under too exciting a process, or a weakening effect will be the consequence. After they have become well rooted, a removal into moderately-sized pots will be necessary. And here we may state as to the description of soil most suitable, one of medium quality will best answer the purpose; as a firm and substantial growth is the most desirable, and most requisite to favour the accomplishment of the object in view. Also as to the extent of pot-room the plants will require throughout their process; while they must not be allowed to suffer in any degree from the want of an increased space in which to extend their roots: particular regard must be had that pots not at all larger than necessary only are used. It is necessary to keep the roots within prescribed bounds, in order to preserve evident proportion between the graceful style of growth and elegance of the plant, and the size of the pots employed.

The other conditions, consisting in a proper supply of water to the roots, the temperature in which the plants are placed, the degree of moisture in the atmosphere, as well as stimulants in the shape of liquid manure, a higher degree of temperature, &c., must all be regulated in their application according to circumstances, over which there can be no systematic control.

From the commencement of, and throughout the plants' career, that process termed forcing must not be at all exercised, as the ostensible object is not the accomplishment of our purpose by means of undue excitement, but by steadily bringing out and carefully developing the energies and vigour of the plant. If, on the one hand, highly-stimulating practices are resorted to, a quick, but at the same time weakly growth will ensue; and on the other, if a tardy and reverse of vigorous development be permitted, defeat will be sustained at the very outset.

A proper cutting having been chosen, and the circumstances attending the beginning of its growth being favourable, in conjunction with which, if the various conditions necessary as it progresses are properly applied, a clean straight growth will be the result, with very little inclination to produce lateral branches; where such inclination is exhibited, and the branches are at all allowed to extend, they must be stopped at the first or second joint; and as they in turn produce shoots, a similar stopping must take place. At this stage of the plant's growth, the production of lateral branches, in a thing of a succulent nature like the *Fuchsia*, providing they are kept within prescribed bounds, as just directed, will have a beneficial effect, from the existence of a greater extent of foliage to feed upon the atmosphere. By the practice of stopping the branches, the main vigour of the plant is directed to the stem. After the plant has completed its growth, the lateral branches in question must be pruned off close to the stem, from which no more must be allowed to grow, excepting those from the top of the plant, and which are meant to form its head.

In one season, according to the various habits of the plant as regards their robustness, or delicate nature, they will attain to various dimensions; as each reaches the required height, it may be stopped, and the formation of the head forthwith commenced. It is not necessary to give minute directions for the guidance of this point; the operator's own judgment must be the guide which regulates its size, &c., the strength of the stem, height, &c. being kept in view. Till the head is properly formed a continual stopping of the branches will be necessary; but after its formation is complete, the branches should be encouraged to grow long, as their depending habit, from so growing, will have a charming effect. Such plants as, up to the period when their growth is completed, have not grown sufficiently high, must be placed away till another season, and then subjected to a similar course of treatment till the required dimensions are obtained.

All flowers the plants may produce through their growth must be removed, to prevent an unnecessary expenditure of their resources.

The great advantage of employing the method we have described, is the quickness with which a standard specimen may be obtained, coupled with the fact, that, whatever the kind, from the most recent novelty to the oldest in cultivation, all are alike easily induced to grow to that shape. As to any stated height at which a plant should be considered sufficiently high, there is undoubtedly a point which it may be thought perfection to attain—a variation from which may be allowed to give variety, and permit the indulgence of individual taste. But as we have in a former volume enlarged upon this point, we need not repeat it here.

The recently-mentioned advantages of the method just referred to brings us to the consideration of another, which may be employed by all, and resorted to by those who have not the means of carrying out the one before mentioned. It is well known that when planted in the open border, and circumstances of suitable soil, situation, &c., are favourable, it grows with excessive luxuriance. Plants of some of the old and strong-growing species, which had been planted out some years, we have known annually to produce shoots from five to six feet high: stems of these dimensions, or those of less, if it suit the taste of whoever may wish to possess them, may be chosen, and carefully separated from the parent plant, employing great caution, and patiently endeavouring to detach them with roots: it is not necessary that a large mass be attached to the stems that are thus obtained. The most easily procured, and such as can be got without injury to the remaining plants, which should always be kept in view, are those which grow at the outside; they also have the best roots.

It is doubtless understood, that the proper time to wrest these stems from their parent plants, is when they have grown to as great dimensions as they are likely to attain, and before they experience the least chance of being injured by frost. When taken up and potted according to the instructions already given, and securely fastened to straight rods, they may be placed in the back of a greenhouse, or in any situation where they will be secure from frost, and not subject to molestation. At the return of spring, they should be plunged in their pots, in any spare corner in the open air; and attention to the formation of their heads is all the care necessary till they have grown suitable objects to adorn any situation the fancy may dictate.

When the pendant flowers, and drooping inclination of head in the *Fuchsia* is recollected, in a great measure preventing its being seen to advantage, the idea of raising it into view, by growing it as a standard, will at once recommend itself to those of our readers under whose observation in that shape it may not have yet come. At present, except in a solitary instance or so, it is only in the shape in question employed, and that to an inconsiderable extent, in lending a charm, and giving increased effect to the arrangement of plants in houses. But if adopted where we are about to recommend it an admission, while the interesting features of its aspect will be increased, it will introduce a novel and striking feature to the situation in which it is placed. These observations will be easily recognised as a prelude to claiming for it an admission into the flower garden and pleasure ground. A first consideration here will present itself as to the proper situation in which to place it; upon this point, however, it is difficult to give particular instructions: individual taste must be left to its own exercise in this particular. It may be introduced with good effect to mark the termination of particular beds in a flower garden, or to occupy similar points in the latter to those which are devoted to standard *Roses*. In such situations as those just mentioned, it must be borne in mind that, except it is placed centrally, uniformity in its disposal will be necessary. Plants placed so as to form a line in particular points of view, have a most striking effect. We must not omit to point out the necessity, wherever it is placed in the open air, of having regard to its liability to injury from exposure to winds, &c.; consequently, placing it in a particularly open aspect should be guarded against.

It will, of course, only adorn the flower garden in the summer season; replanting it every spring is, therefore, of course, necessary; plants that are turned into the open border will grow most luxuriantly, and present the most engaging aspect; indeed, old specimens must of necessity be planted in this way, and well stimulated to induce a free growth; and as they increase in age they had better be superseded with fresh plants. They do not, as may be expected, flourish with the vigour that invests them with a feature of particular interest, for a long period; the necessary practice of curtailing their roots, each time they are removed from the open ground, to be preserved through the winter, materially contributes to weaken their natural luxuriance. Newly-raised specimens, and those which are still vigorous, may be liberally potted, and plunged in their pots, instead of being altogether planted out; thereby preventing being exercised upon them the injurious operation before mentioned.

The standard or free form of training is most applicable to *F. corymbiflora;* it shows the magnificence of that species to an advantage that must be seen to be understood. It is equally applicable to the splendid recent introduction, *F. serratifolia*. *F. fulgens* can also be rendered a most interesting object, by bringing it under the method of training in question. In short, there is not one of the multitude of beautiful objects that now crowd our gardens, that may not, with care and perseverance, be induced to erect itself into a beautiful tree.

We do not wish to be understood as recommending this method of training alone, in growing the *Fuchsia*, but we strongly recommend that where *Fuchsias* are grown, that some be thus trained.

Before concluding, we will advert to the prevalent neglect of any endeavour to render *Fuchsias*, cultivated in pots, and not trained in the standard form, the interesting objects they ought to be. In many instances, where every attention has been paid to the selection of suitable soil, proper provision as regards pot-room, &c., we find the plant, so far as any system of training is concerned, altogether left to shift for itself. The advantage observable in the aspect of plants, from attention to this particular, is so evident, that a too general neglect of it alone could have induced us to thus bring it under notice. The *Fuchsia* so well repays any care bestowed upon it, that when we recollect all that is necessary in reference to the point in question, is the checking undue luxuriance in a branch where it exists, by stopping it, the removal of one where they are too crowded, &c., is all that is required to greatly improve it, at the same time leaving it to display its natural gracefulness.

We have in this article gone rather more into practical detail than is our usual custom; but when treating of so extensively admired a plant as the *Fuchsia*, we feel convinced that, by endeavouring to place it in a more engaging light, our exertions are taking their proper aim.

ON GROWING PLANTS AS EPIPHYTES.

THE result of some experiments instituted at Chatsworth, in the course of last summer, have demonstrated that it is not necessary, with regard to any genera or species of plant, that a particular method of treatment or stated conditions, always unfailingly applied by the same rule of circumstances, although in their effects leaving nothing to be expected or scarcely desired, should be undeviatingly adhered to, thereby preventing that healthy resort to experiment, and absorbing the inclination to inquiry, that is often productive of the most pleasing results.

There is an immensely wide difference between the anxious desire to improve on doing well, which we commend, and the restless inclination to experiment, that in its exercise effects nothing but its individual indulgence. While we applaud the one we condemn the other.

But to return to the professed object of this paper—a consideration of "growing plants as Epiphytes," which we shall carry out by giving some account of the experiments alluded to.

Few who had seen the lovely *Æchmea fulgens*, as it flowered, planted in rich soil, in the large conservatory, that any improvement as regarded its flowering could be expected, much less is it credible that treated in every respect as an Epiphyte, the most striking improvement in the freedom and luxuriance of its growth, and increased size and splendour of its inflorescence was effected.

True Epiphytes consist of all the numerous genera and species of *Orchids* that, in their native climes, depend for their subsistence and supply of nutriment upon the heavy dews and saturated state of the atmosphere, pervading the jungles and woods, of which they are inhabitants.

They are found attaching themselves to fallen trees, sucking with their large fleshy roots the moisture from the decayed vegetable matter that accumulates upon them, or, hanging on the branches of living ones, striking the organs with which they drink in their food into the naked atmosphere, imbibing from it the moisture it holds in suspension.

The difficulty of creating, by artificial means, conditions similar to those which the description of plants under consideration enjoy naturally, was, on their being first brought under cultivation, the great obstacle that prevented so long a time success crowning the efforts of those engaged in growing them. Such difficulties are, by the light of science combining its influence with the exertions of practice, in the present day almost forgotten. But we must not yet give persevering inquiry long vacations, so much is there directly or indirectly connected with horticultural pursuits that we have yet to learn.

The usual method of obtaining the moistness of atmosphere necessary to the successful cultivation of Epiphytal plants, is by placing in contact with the sources of heat a body of water, which is engendered into the atmosphere by gradual evaporation, the amount of such moisture being regulated by the quantity of water employed in the manner alluded to, and the degree of heat existing where it acts upon such water.

In placing the element in question to produce the evaporation just mentioned, various contrivances are resorted to. Shallow cisterns formed of zinc, of various shapes, according to the situation they are required to occupy, and placed upon the flues or hot-water pipes; garden-mats or similar material, kept saturated with moisture, and put in like situations, are amongst the methods in practice. The first mentioned should always be used in preference to the latter, where practicable. But these are being fast superseded by the various heating apparatus, which, in their construction, provide appendages of this last subject, carries us back to a point from which we fear we have been digressing.

A small plant of *Æchmea fulgens* was selected, and fastened with fine copper wire upon one of the rhizomes described; in placing it, attention was paid to preserving its roots from being injured; which must always be borne in mind when dealing with other plants; and at first it is desirable to prevent their being exposed, as the plant being altogether subjected to new conditions, it is apt to receive a check that it is well to guard against. By cutting the *Fern* roots open in several directions, and laying in those of the plant, or spreading them over its surface, and covering them with living mosses, mischief ensuing from the last causes may be counteracted.

The plant of *Æchmea* just referred to, after being secured in a manner conformable with these directions, was suspended in the Orchidaceous house, where it grew in the manner we have stated. It was not the only Bromeliaceous plant so evidently benefited by being treated as an Epiphyte; *Pitcairnea puniceus* was rendered equally interesting, as also several other species of the same order.

Columnea grandiflora, a plant very sparingly producing flowers, and, from its unaccommodating stiff branches, and formal habit, not easily induced to wear a pleasing aspect, on being placed under similar circumstances to those applied to *Æ. fulgens* grew and flowered in a very surprising manner; under this method of management, it is placed wholly in the power of the cultivator as regards the disposal of its branches.

Juanulloa parasitica, to the probability of which being for the reception of water, and which is under every controul, so that at pleasure it can be dispensed with, or employed.

In speaking of heating apparatus, we may remark, that to such a degree of perfection, as regards their effectual nature, the simplicity of their construction, and the ease with which they are managed, are they brought, as to leave scarcely anything further to be desired.

Shading from the effects of a burning sun and strong light, is of great assistance in preserving suitable conditions for the growth of Epiphytes, in the structures in which they are placed. In short, it is at once a necessary practice, not only because it enables a suitable state of atmosphere to be much more easily maintained, but it preserves the roots, which, in a healthy state of things, are on every side exposed, from being injured by scorching; it also permits them to carry on their functions, which they would not be able to do in strong light.

A material in which the roots of Epiphytes are commonly placed before the plants are suspended, is Sphagnum moss, put in wire baskets: other mosses are also sometimes used; they are frequently attached to naked blocks of wood; in other instances these latter are employed, and living mosses placed over the roots of the plants attached to them.

The material principally employed by us, consists of the large rhizomes of the common *Ferns*, with their fibrous roots adhering to them. The best are the rhizomes of the female *Fern*, *Asplenium Filix-fœmina*, in point of durability, which is of great importance; they may be compared to masses of fine wire, so tough and lasting are they; and in their fitness for the roots of plants to enter, and the manner in which they are acted upon by moisture, they resemble fibrous peat. The consideration an Epiphyte, we alluded to in a former Number, has succeeded and flowered well, treated as such; and, from its tassels of bright orange flowers constantly exhibiting has been a striking object in the Orchidaceous house.

We might multiply instances, but have referred to sufficient to induce those who take an interest in the appearance of their Orchidaceous houses, to institute experiments, and discover for themselves whether there are not many plants capable of being made equally interesting with those we have instanced.

In choosing subjects upon which to experiment, it must be borne in mind, that there are many which, to endeavour to make succeed as Epiphytes, would be altogether a violation of principles; for instance, it would be palpable absurdity to expect greenhouse plants to succeed thus treated.

An extended knowledge of the various habits of plants is the surest antidote to any mistakes of this nature; as, when we recollect that Bromeliaceous plants in general love to revel in high and moist temperature, we cease to wonder that the species of that order which we have experimented upon have succeeded so favourably.

Orchidaceous plants are now becoming so generally grown, that abundant opportunities of treating plants in the manner in question, and of introducing them into structures devoted to Orchideæ, is now afforded, conferring upon the arrangement a novel *trait;* and the successful manner in which those we have alluded to flourishes, does not permit their claim to attention to rest upon novelty alone.

Stoves, in which a temperature suitable for the welfare of its inmates is maintained, will be as favourable for the plants grown as Epiphytes to succeed in, as Orchidaceous houses. Their introduction to the latter will create a pleasing variety with its inhabitants, from the contrast of habit of growth, colour of flowers, &c., as well as the exercise of any peculiar method of training, to vary the scene.

FLORICULTURAL NOTICES.

NEW OR BEAUTIFUL PLANTS FIGURED IN THE LEADING BOTANICAL PERIODICALS FOR DECEMBER AND JANUARY.

Anemo'ne japo'nica. Was stated to be an *Atragene* by Thunberg, a Swedish botanist. De Candolle suggested that it was probably an *Anemone.* Dr. Lindley states, "It is not only an *Anemone,* but a most beautiful one, not inferior to the Chinese *Chrysanthemum,* or the *Anemone coronaria* of the East. For its introduction to this country the public is indebted to the Horticultural Society, who received it from Mr. Fortune in 1844. That indefatigable collector had met with it at Shanghae, the Japanese port of China." It flowered in a greenhouse in the garden of the Society, in the autumn, where it wore a very beautiful aspect. It is thought it may prove hardy. Siebold states it inhabits damp woods on the edges of rivulets, on a mountain called Kifune, near the city Mako, in Japan. It is cultivated by the Japanese for its beautiful flowers; they propagate it by offsets, as its seeds seldom ripen. It is found to prefer a moist loamy soil. *Bot. Reg.* 66.

Anthoce'rcis ilicifo'lia. "A species, in colour and general habit, nearly allied to the showy *Anthocercis littorea;* but very destitute and remarkable for its size, often six feet high, and its very long twiggy branches, leafy below, terminating in elongated compound spikes of graceful pendant yellow flowers, the inside of the widely campanulate tube of which is elegantly marked with dark blood-coloured lines. It was detected at the Swan River Settlement by Mr. Frazer, (No. 186 of his collection,) who speaks of it as general on the river banks, and afterwards sent to us by Mr. James Drummond. Seeds were given to the Royal Dublin Society by G. W. Webb, Esq., of the Commissariat department there ; and these, on being raised by Mr. Moore, of the Glasnevin Botanic Garden, were kindly communicated to us in a fine state of flower in July, 1845. The plant requires a warm greenhouse in the winter ; but in summer, during the flowering season, a cooler place with a plentiful admission of air will be the best suited to it." *Bot. Mag.* 4200.

Bu'ddleya Lindleya'na. Was found by Mr. Fortune, the collector whom the Horticultural Society sent to China, soon after his arrival there. He sent home seeds, which were soon after raised in the garden of the Society. Dr. Lindley writes:—"Dried specimens have now reached this country, and one of them is before us. It consists of a branch not quite a foot and a half long, on which there have been growing seven spikes of flowers, from two to three inches long each." The natural appearance of those flowers will be seen from our figure. Their colour is a deep rich violet, a little verging upon grey, on account of the numerous short hairs with which they are closely covered.

"In cultivation this shrub has hitherto proved unwilling to flower ; it grows very vigorously, running to wood, as we say, and requiring some special mode of management, in order to stop its exuberant vegetation. It is about as hardy as a Fuchsia. The specimen figured was taken from a plant in the large conservatory of the Horticultural Society ; but it was by no means so beautiful as the wild plant must be. Probably very poor gravelly or clayey soil and a hot dry atmosphere would suit it much better than the rich mould usually found in gardens." *Bot. Reg.* 4.

Cattle'ya ma'xima. In some respects resembles *C. Mossiæ* and *C. labiata.* "Its main peculiarities consist in its long-channelled pseudo-bulbs, and in its very convex wavy petals, which are quite different in appearance from the thin, nearly flat petals of *C. Mossiæ* and *labiata.*

"If, however, we attach any value to difference of colour, then indeed there remains no difficulty in separating this plant ; for it is remarkable for the dark crimson veins richly traced upon its pallid lip, and for a beautiful net-work of purple streaks, which is drawn over all their surface. At first, too, the colour of the flowers is so pale as to be almost white ; but the tints heighten day by day, till at last the blossoms acquire the rich tint represented in the accompanying plate." *Bot. Reg.* 1.

Cu'phea corda'ta. "A truly beautiful plant, from the rich scarlet of its two large petals and calyces. Would that all the species of this extensive genus were as distinctly marked as the present one ! It is a native of hills and woods in Peru, about Huassahuassi, Chaclla, Acomayo, and Huanuco, and from that country seeds were sent to Mr. Veitch, of Exeter, by his collector, William Lobb, in 1842, from which plants were raised that blossomed in August, 1845. The plant is kept in the stove, and seems to flower freely there : it may be increased by cuttings." A suffruticose plant, which, as well as the foliage, is downy, with herbaceous erect stems, and opposite ovate leaves, entire, and the largest of them two inches long, passing insensibly into bracteas as they approach the flowers, which are produced in terminal panicles, "formed of lax racemes, each bearing two to four drooping, large, (for the genus,) almost entirely bright red, or rather scarlet flowers." *Bot. Mag.* 4028.

Evo'lvulus purpu'reo-cæru'leus. "A small but most lovely little suffruticose plant, with copious flowers, at first sight not much unlike those of *Anagallis cærulea,* but borne upon erect twiggy branches with small patent or reflexed leaves, and worthy a place in every garden, on account of the brilliant colour of its blossoms. Its nearest affinity, as to species, (and it is certainly an undescribed one,) is with *Evolvulus Arbuscula* of Poiret, according to the Bahama specimens in our herbarium, thus named by M. Choisy, the author of the 'Convolvulaceæ,' in De Candolle's Prodromus ; but that has still smaller and erect leaves, not tapering at the base, like those of the one now before us. It inhabits arid rocks near the sea, in the district of Manchester, Jamaica, and caught the attention of Mr. Purdie, its discoverer,—who sent home seeds of it to the Royal Gardens of Kew—by its showy bright blue flowers." A rather slender perennial, growing a foot and a half high, branched from the base ; the flowers, which are of a "rich ultra-marine blue," with a white centre, are produced terminally. *Bot. Mag.* 4202.

Fagræ'a obova'ta. "An exceedingly handsome stove-plant, both as to its foliage and the large cream-coloured flowers, which, moreover, are very fragrant. It has been long cultivated in the Royal Botanic Gardens of Kew, plants having been sent by Dr. Wallich, from Sylhet, where, as at Singapore, according to the same botanist, it is a native. With us it has never blossomed. For flowering specimens I am indebted to the kindness of Mr. Shepherd, of the Botanic Garden, Liverpool. It flourishes in a moist hot stove, and succeeds best with bottom-heat." In its native country it grows to a moderate-sized tree, but grown in pots only attains the dimensions of a shrub five or six feet high. Its leaves are rather large, opposite, glabrous, as well as every part of the plant; "oval or sub-elliptic, more generally obovate."

Its flowers are large, cream-coloured, "between campanulate and funnel-shaped, produced in terminal short sub-cymose" panicles. *Bot. Mag.* 4205.

Gove'nia fascia'ta. The different species of this genus of Orchids are found very difficult to distinguish, so much do they resemble each other. The present species was collected by Mr. Linden, in damp forests in Venezuela, 5000 feet above the sea. "It is," states Dr. Lindley, "one of the prettiest of the genus, having clear yellow flowers, whose sepals and petals are beautifully marked by fine broken bands of crimson. The long bracts, thin narrow spike of flowers, and oblong, not ovate, lip, are the marks by which it is best recognised. The leaves are about a foot long, and three inches wide." A terrestrial Orchid requires a stove, and a soil composed of three parts rough peat, and one of sandy loam, with an abundant supply of water when growing, to be gradually withheld as the plants approach a state of rest. *Bot. Reg.* 67.

Habrotha'mnus corymbo'sus. "A very handsome species of *Habrothamnus*, native of Mexico, sent to the Royal Gardens of Kew by Mr. Low, of Clapton, quite distinct from the *H. fasciculatus*, figured at Tab. 4183 of our present volume. It is everywhere glabrous, apparently a much taller plant, and with the corolla of a very different shape, widening upwards, and then suddenly contracted so as to have an urceolate tube; and having the segments of the corolla much longer acuminated, and at length reflexed. Its growth appears to be much more rapid, and it is more easily cultivated, only requiring the protection of a greenhouse in the winter. In the summer it does best in the open air, and may readily be increased by cuttings, as far as can be judged from the *Meyenia corymbosa* of Schlechtendahl." The plant forms an erect, much branched shrub, five or six feet high, with alternate ovate-lanceolate, in some parts crowded leaves; the main branches producing copious, short, leafy ones, each of which terminate "with a corymb of pretty deep rose-coloured flowers." *Bot. Mag.* 4201.

Hein'sia Jasminiflo'ra. "A very little-known shrub, from Western tropical Africa, presented to the Royal Gardens of Kew by the Earl of Derby, who imported it from Sierra Leone, through Mr. Whitfield. The only description we have of it is by De Candolle, in the Prodromus above quoted, where it is taken up from a specimen gathered by Smeathman, and deposited in the Herbarium of L'Héritier. It was named in compliment to the philologist Heinsius, translator of Theophrastus. The shrub has a good deal the appearance of a *Gardenia*, or *Randia*, with flowers shaped indeed something like those of a Jessamine, that is, salver-shaped, but very much larger—the segments of the corolla broad and singularly striated, and often puckered (in those respects much resembling the sepals of some species of *Clematis*, particularly *Clematis viticella*). It requires the heat of a stove, and has flowered with us in September." A shrub of middling size, glabrous, with opposite, nearly erect branches, and opposite, almost sessile, narrow acuminate leaves. Flowers are produced terminally in threes or fours, their segments pure white, with a green tube.—*Bot. Mag.* 4027.

Ipomœ'a sim'plex. Sir W. J. Hooker writes, "When the rounded, uncouth-looking tuber of this plant was presented to our Garden by the Earl of Derby, in 1844, brought home from the eastern colonies of South Africa by Mr. Bender, we were not prepared for a cluster of such lovely flowers as appeared at the base of the stems in July, 1845. It is one of the Ipomœeas that is best worth cultivating, for it only needs a small pot, placed in a greenhouse, and no trellis or apparatus to support the stems, which, at most, do not exceed a foot in length, and are clothed with long, slender, almost grass-like leaves. It is, however, difficult of increase." The plant consists of a solitary tuber, from which grows slender stems from six inches to a foot long, woody at the base, where the flowers, which are large, fine, rose-coloured, are produced on short peduncles.—*Bot. Mag.* 4206.

Læ'lia peduncula'ris. Has several times flowered in the rich collection of Mr. Barker, of

Birmingham. It is a most graceful and interesting species. "Its flowers are of one deep rose-colour, a little heightened at the lower part of the lip, and they droop gracefully from the end of a slender elastic scape. The unusually long peduncles add to the elegant appearance of the species." It most nearly resembles *L. rubescens* and *L. acuminata;* from the former it differs in the lip not having the hairiness of the lip of that species, and from the latter, in its petals and lip not being wavy and sharp-pointed, as are those of *L. acuminata.* In cultivation it may be tied to a block of wood, or potted in a turfy-heath mould. During the period of its growth a high temperature and moist atmosphere should be maintained, with a pretty abundant supply of water, to be gradually withheld as the plant ceases growing. It should be shaded from the hottest suns of summer, and in the winter season not subjected to a higher temperature than 65°.—*Bot. Reg.* 69.

OPERATIONS FOR FEBRUARY.

So singularly favourable for gardening operations in the out-door department has the weather been since the welcome cessation of the long-continued rains of last autumn, that, where a wise and persevering determination has seized such agreeable and unlooked for advantages, little or nothing, in the ordinary way of alterations and improvements, or of the usual work, the peculiar allotment of each season, now remains to be accomplished. Where any of either class is still existing, the crowd of objects that daily begin to force themselves into notice, as requiring immediate attention, will furnish a sufficiently convincing proof of the necessity of their being speedily completed.

Any projects that have been undertaken, and that unavoidably require every exertion and all the available force at command, to insure a desirable conclusion, in preference to hurrying the whole to a completion, and neglecting what should be immediately executed, it will be more permanently advantageous to carry out: an arrangement that would insure the execution of extensive works, by fixedly giving a prompt attention, and a first consideration to what is of most importance; gradually overtaking, with a convenient but substantial finish, what is of less moment. Such a method of procedure will be found more eminently beneficial than giving over, to the least symptom of neglect, those departments which will not bear it with impunity; in common with these last, consigning those which are usually considered of less consequence, to a similar disregard, till eventually, from necessity, all is gone through with an injurious haste, little in accordance with the *care* circumstances entitle them to receive.

In pursuance of previous directions, shrubbery and other borders in the flower garden and pleasure ground, which have not yet been operated upon, should be actively dealt with, by first seeing to the pruning of the various shrubs which occupy them, and which may require a careful application of that process upon them. When pruning such things as *Roses, Loniceras,* and similar genera, and removing suckers from them, the latter may be placed in the reserve ground, there to establish themselves, till required elsewhere.

In pruning *Roses,* and various other flowering shrubs and climbers, by varying the period of operation, a corresponding variation in the time when their flowers are produced will, to some extent, take place. It is especially desirable, by skilfully applying the operation in question, as it is each time performed, to obtain throughout the whole parts of climbers, and flowering trees, and shrubs in general—particularly those in conspicuous points of view—an equal distribution of fructiferous wood. Specimens occupying trellis-work, trained on fences, or against walls, will, in their appearance when flowering, to a great degree be improved, if such a result is obtained in them. The various supports of the description of specimens just referred to should be carefully examined, putting them in efficient order.

Where planting trees and shrubs has been unavoidably delayed, its performance should receive immediate attention; every care being taken when removing and planting them: the various directions for the proper performing of which we have in another place recently given—always necessary—should now be scrupulously adhered to.

It is strictly necessary in planting any rare evergreens, or other more than usually valuable plants, to devote untiring zeal to insure their being skilfully managed. Such being placed in conspicuous situations will especially come under this direction. Repeated waterings, whatever is the state of the weather, with unfailing attention to this point in a dry season, will well repay the labour expended in its performance.

The increase, removal, and arrangement of herbaceous plants, without further delay, should be finished. In forming new, or filling up old clumps of *Hollyhocks,* too much care cannot be bestowed upon the plants removed, as, from their experiencing a check in removal, the strength of their future flower-stems will be materially lessened. They will be greatly benefited by plunging the whole of their roots into a mass of semi-liquid manure, or even good soil brought to that state.

The beds of the flower garden should be prepared for their summer occupants, by digging, supplying fresh soil, leaf-mould, rotten dung, &c., according to the various circumstances that regulate their introduction to each.

The different plant structures now demand particular attention to be given to their various inmates ; wherever plants are in flower, and such are so disposed as to come under observation, there an air of neatness, order, and, as far as practicable, dryness must be maintained, ever qualifying all with the strictest regard to cleanliness. The utility of a compliance with the last direction is always evident in its execution. Instructions of less moment in their aspect, but immensely significant in their bearing upon the future, are those which direct a careful examination as to the quality, quantity, and state of preservation, of the numerous plants, upon which depends an efficacious display of floral beauty throughout the summer and autumn. The result of the examination in question will discover, according to various circumstances, what steps it will be necessary to take, as regards the propagation of particular genera or species, the increase of individual plants, &c.

From the late mild weather and spring-like temperature that has abounded, it has been very difficult to prevent soft-wooded plants bursting into premature growth. An unusual tendency to dampness will also be very prevalent. The various remedies we have previously given, to counteract the injurious effects of the latter, must be unceasingly resorted to, and the admission of all air possible, with a vigilant regard to maintaining the plants, and every object adjacent, as perfectly dry as circumstances will permit, to preserve them from precocious growth.

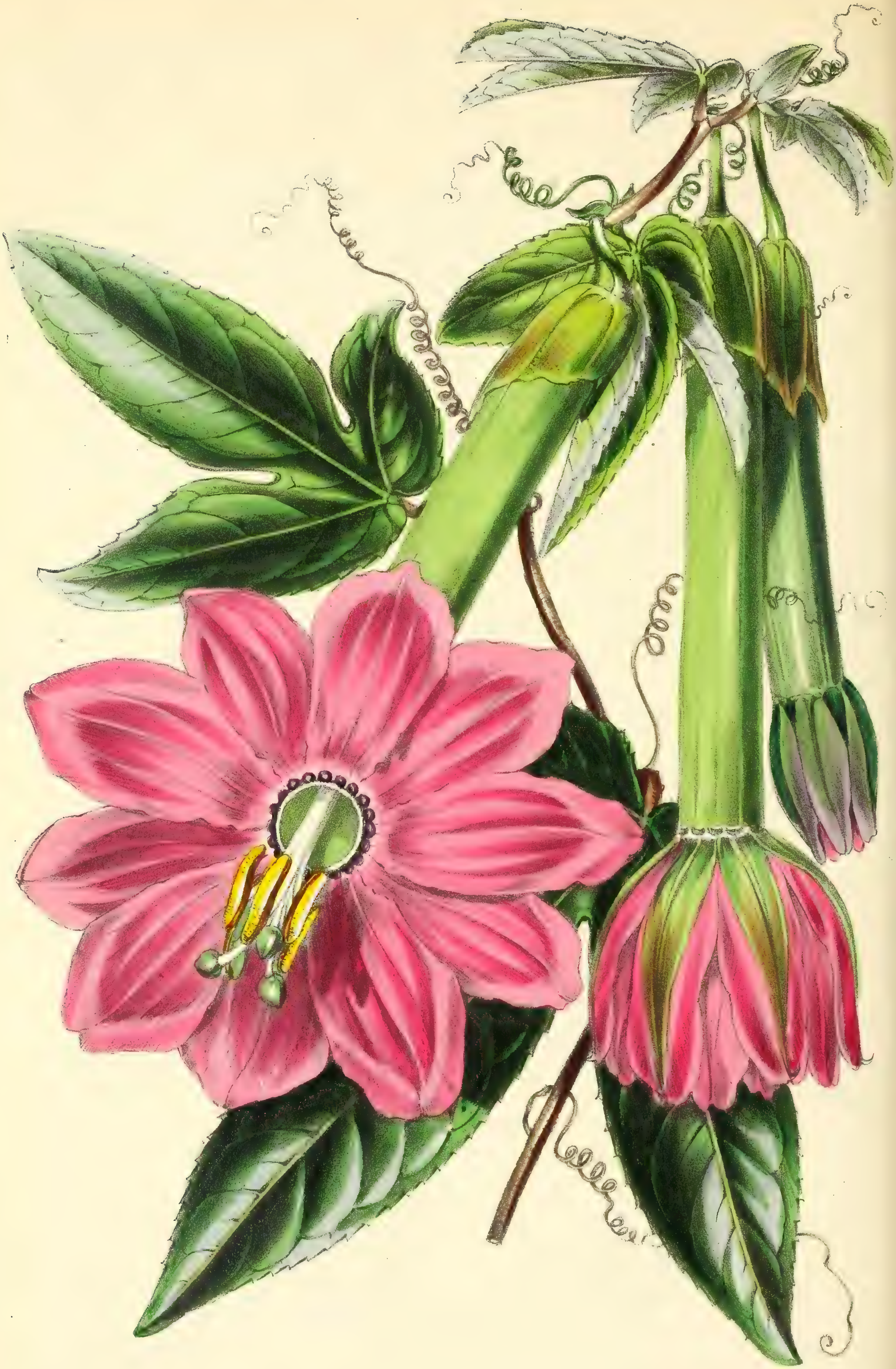
Collections of plants should henceforth be *repeatedly* inspected, singling out any that may require potting, and carefully performing that operation upon them, thereby superseding the erroneous, but not unusual, practice of doing the whole simultaneously.

Orchideæ will this month require especial attention : the majority is generally potted ; but those only which are starting into growth should be operated upon, and these will require very carefully dealing with; it is most advisable to keep the new growth, bursting from each, *well elevated* above the material placed for their roots to ramify into. A peculiar regard must be had to administering to each plant an increased supply of water, as it exhibits the need of it. A master hand, though, must regulate that supply, as an incalculable amount of mischief is soon done by an improper application of this element.

The houses or pits devoted to forcing flowers must be regularly supplied, to enable a corresponding display to be maintained where they are placed when in flower; as each plant sheds its flowers, it should be placed in a suitable temperature to mature its growth, not thrown aside as useless, as is too often the case. In addition to the various species usually forced, many free-flowering plants from the stove and greenhouse may now be introduced and gently brought into flower.

An examination of the seeds of annuals should take place, selecting for sowing those of delicate kinds intended for the open ground, and which it is necessary to raise and cultivate in pots, carefully tending them, not permitting their flowering, but rendering them bushy by repeatedly pinching off the points of their shoots, till it is time to place them in the situation they are destined finally to occupy. Any new species, the rarer kinds, and those which are often employed by having a successional supply, to give variety and create a lively effect in the houses through the summer, should be sown now, or otherwise, as it is wished to have them in flower. The scarce and valuable Dahlia tubers must be placed in a little warmth ; if slight bottom-heat can be given them, they will break more healthily and effectually ; their treatment as to increase must depend upon the number of plants required, &c. ; it is most injurious to force the plants to a larger size before they are planted out, which is repeatedly done, to their manifest harm.

To provide against being overtaken by severe frost, every description and variety of protecting materials should be kept in perfect readiness.



S. Holden del & Lith

Tacsonia mollissima

TACSÒNIA MOLLÍSSIMA.

(Very soft Tacsonia.)

Class. **MONADELPHIA.**

Order. **PENTANDRIA.**

Natural Order. **PASSIFLORACEÆ.**

Generic Character.—*Tube* of *calyx* long, with a ten-cleft limb, the five inner lobes probably petals; throat furnished with a scaly membrane.—*Don's Gardening and Botany.*

Specific Character.—*Plant* climbing. *Branches* rounded. *Leaves* deeply three-parted; segments ovate-lanceolate, serrated, downy above, almost tomentose beneath, with strong reticulate veins. *Tendrils* simple. Stipules rather small, semi-ovate, toothed, acuminate *Peduncles* solitary, single-flowered, much shorter than the tube of the flower. *Involucre* three-cleft. *Calyx-tube* very long, stout, cylindrical, green, glabrous, the mouth glandular at the margin; segments five, oblong, obtuse, mucronate. *Petals* five, oblong-obtuse, rose-coloured. *Column* as long as the tube.—*Bot. Mag.*

Synonyme.—*Murucuja mollissima.*

The species we now write of has been very recently introduced to the country by Mr. W. Lobb, and Mr. Hartweg. The former sent it to Messrs. Veitch, of Exeter, gathered in woods near to Quito; and the latter to the Horticultural Society, seeds, obtained in the gardens of the same place. From the last-mentioned source, a plant in the possession of Messrs. Mountjoy of the Ealing Nursery,—which was exhibited at a meeting of the Horticultural Society, in their rooms, Regent Street,—by the permission of those gentlemen, furnished the subject of our drawing.

Humboldt discovered it at Santa Fé de Bogota; and in the mountains of New Grenada it is found at an elevation of nine or ten thousand feet above the sea. It is remarkable for the great length of the tube of its flowers, their fine rich pink colour, and beautiful velvety green foliage.

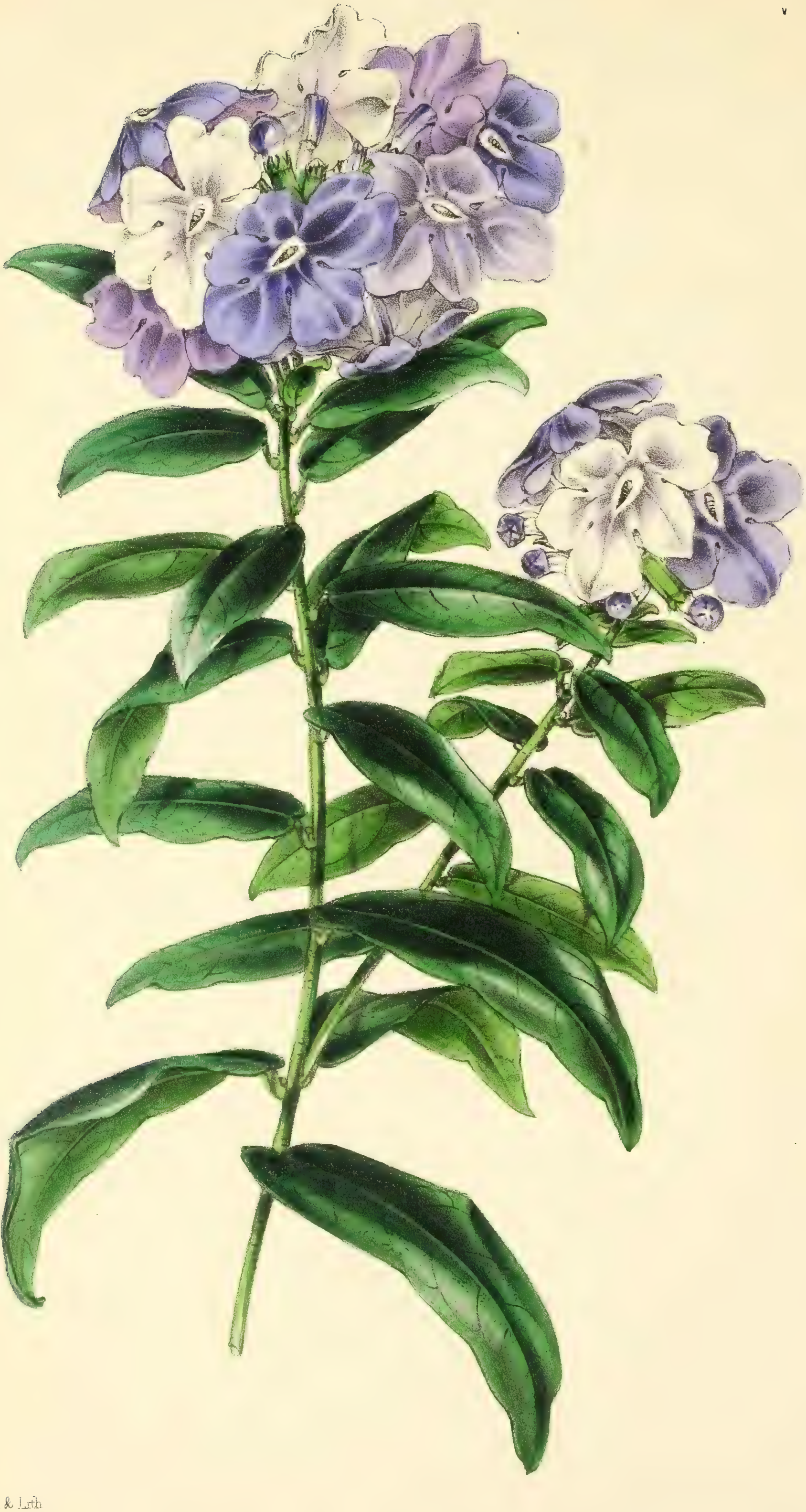
Dr. Lindley, writing in the February number of the "Botanical Register," states:—"It is called soft-leaved, because its foliage is clothed with a fine soft down, which is sensible to the touch, though not visible to the naked eye. The most singular part of its structure is the row of green glands or warts which stud the purple petiole, and which furnish one of the best means of recognising the species. Botanists believe these processes to be organs of secretion, and perhaps they are so; but why this soft-leaved *Tacsonia* should require a dozen for each leaf, when another species very nearly allied to it, has none, is what physiologists fail to explain."

T. mollissima, in its main features, greatly resembles *T. pinnatistipula*; in some respects it is superior, is equally hardy, and possesses as great capabilities of forming, under favourable circumstances, as splendid an object as that fine species: which is not so universally cultivated as it ought to be.

The proper situation for either to be grown is where they can luxuriate, without being restricted to a particular space. A plant of *T. pinnatistipula* in our possession, planted where its *roots* are not permitted to range beyond certain limits, in a house of large dimensions, where artificial heat is never employed but to exclude severe frost, is fast occupying the rafters of the whole roof, flowering in the greatest profusion, six or eight months of the year, and bearing fruit abundantly.

Both species are excellently adapted for a conservative wall, and either we have no doubt, will succeed on a wall of an east or west aspect. *T. pinnatistipula* we have known flower beautifully on the former; and that at the end of the season in which it was planted. Little satisfaction however will be derived from growing them in the open air, if they cannot be safely preserved, in the situation in which they are placed, from frost through the winter; and which is all they require. A high temperature is highly unfavourable to their welfare. When planting them out, no particular preparation of soil is necessary; for general cultivation, loam, peat, and leaf-mould will be found suitable. Cuttings are not difficult to strike, if proper attention is given to them.

Tacsonia is from *Tacso*, a name for one of the species in Peru.



S.Holden del & Lith

Franciscea acuminata.

FRANCÍSCEA ACUMINÀTA.

(Acuminate-leaved Franciscea.)

Class.
DIDYNAMIA.

Order.
ANGIOSPERMIA.

Natural Order.
SCROPHULARIÀCEÆ.

Generic Character.—*Calyx* permanent, inflated, campanulate, five-toothed; teeth equal. *Corolla* salver-shaped; limb five-parted, nearly equal; lobes rounded, repand, with incumbent anthers; tube inflated at the apex, incurved. *Style* thickest at top; stigma two-lobed. *Capsule* ovate, two-celled, two-valved; valves indivisible; dissepiment parallel with the valves, membranous, thin, separating at the base from the parietes of the capsule at maturity.—*Don's Gardening and Botany.*

Specific Character.—*Plant* an evergreen shrub, branches erectly spreading. *Leaves* oblong, acuminated, attenuated a little at the base, glabrous. *Bracteas* lanceolate, acuminated, and are, as well as the calyxes, quite glabrous. *Flowers* few, sub-cymose, terminal. *Corolla* with a bluish-violet limb. *Calyx* brownish.

Synonyme.—*Franciscea Pohliana.*

It is much on behalf of the species under consideration to state, that it is little inferior to those of the genus already published. In general character it approaches *F. uniflora*, better known as *F. Hopeana;* its flowers do not indeed possess the delicious fragrance of those of that species, and perhaps they are produced less abundantly. The manner also in which its inflorescence is borne, constitutes a point of considerable difference between the two species; *F. uniflora* produces its blooms singly, at the axils of the leaves of the young wood, or terminally, in twos or threes. *F. acuminata* bears its in terminal clusters of four or five flowers, and upwards. In this respect it is superior to *F. uniflora*, and resembles *F. hydrangeæformis.*

Naturally it is a product of the province of Rio Janeiro, and Mandioca, in Brazil, from whence it has been, in the instance of the plants which produced those from which our drawing was taken, (and probably in other cases also,) introduced into the country through the Nurseries of the Continent.

F. acuminata, universally designated *F. Pohliana*, is conspicuous for a great symmetry and elegance of habit, which in conjunction with its numerous acuminate leaves, bunches of violet-blue flowers, these latter borne with tolerable freedom, and on plants of very small dimensions, invest it with a well-merited share of interest.

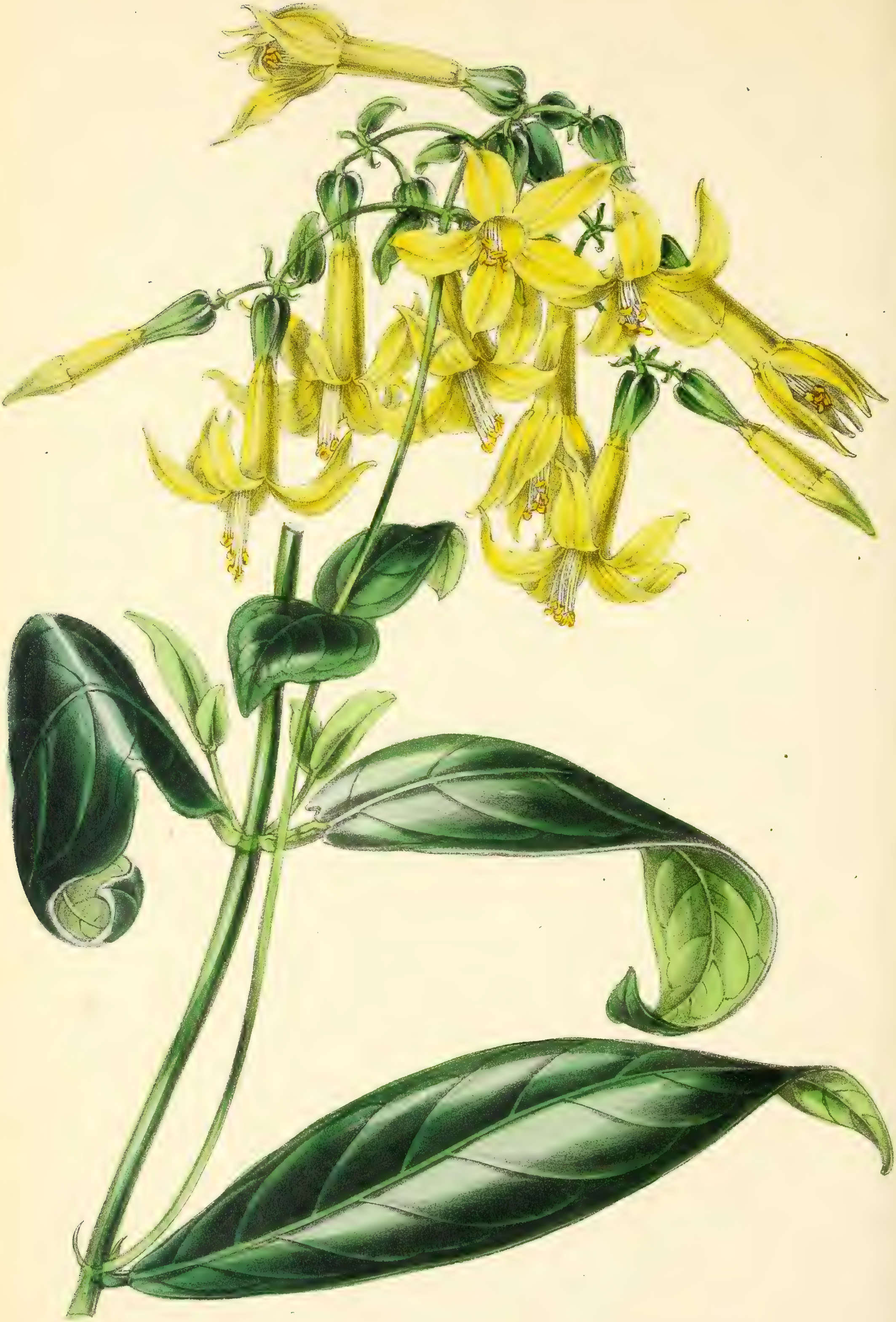
We know of no genus of stove plants more appropriate for a small collection, than that of *Franciscea*, and none better calculated to afford satisfaction to the amateur. The beautiful foliage of *F. latifolia,* and its fine flowers, not less worthy of mention; the singular inflorescence of *F. uniflora,* borne as it is in immense profusion on one plant, and at the same time varying from blue to white flowers; their delightful perfume, independent of the magnificent *F. hydrangeæformis,* presents in one genus a combination of qualities and an amount of worth rarely met with.

In managing them, a liberal course of treatment should be freely resorted to; the moderate pretensions they have to attain large dimensions admits of their being safely subjected to the conditions that induce luxuriance of habit.

Two-thirds fibrous loam, with peat and leaf-mould, will form a soil favourable to their welfare. Cuttings of the young wood, placed in bottom-heat, will strike roots with freedom.

The drawing from which our Plates are prepared was obtained, in August last, at the Messrs. Henderson's.

Franciscea is given by Pohl, in honour of the Emperor Francis I. of Austria, who liberally patronised Botany.



S. Holden. del & lith

Leianthus longifolius.

LEIAŃTHUS LONGIFÒLIUS.

(Long-leaved Leianthus.)

Class.
PENTANDRIA.

Order.
MONOGYNIA.

Natural Order.
GENTIANÀCEÆ.

GENERIC CHARACTER.—*Calyx* tubular, five-angled, five-toothed. *Corolla* funnel-shaped, with a five-cleft limb, and a wide, naked throat. *Stamens* five, exserted, reclinate; anthers oblong, sagittate, unchanged by drying. *Stigma* exserted, small, roundish, bilamellate. *Capsule* one-celled, two-valved, tumid; margins of valves bent into the central placenta, many-seeded; seeds small, viscid. *Leaves* opposite; petioles combined at the base into a sheath. *Flowers* lateral, axillary, and terminal, yellowish, and large.—*Don's Gard. and Bot.*

SPECIFIC CHARACTER.—*Plant* an evergreen shrub, downy. *Branches* fastigiate, four-cornered. *Leaves* lanceolate or oblong-lanceolate, acute, downy, tapering into short petioles. *Flowers* on short, axillary, and terminal pedicels; segments of corolla ovate-lanceolate, acute. *Corollas* yellow.

SYNONYMES.—*Lisianthus longifolius. Tachia longifolia.*

THE genus *Leianthus* is founded on the plant represented in the plate before us. *Lisianthus longifolius* and *Tachia longifolia* are names under which it is described in Botanical works, and known in gardens. From the "Botanical Magazine" we learn it was sent to Kew about half a century ago, but was soon lost; it was again introduced at a later period, and met with a similar fate. It has, however, been very recently restored through seeds sent by Mr. Purdie, Collector to the Royal Botanical Gardens of Kew, from whence have emanated the comparatively few plants now in collections. It is found in woods in Jamaica.

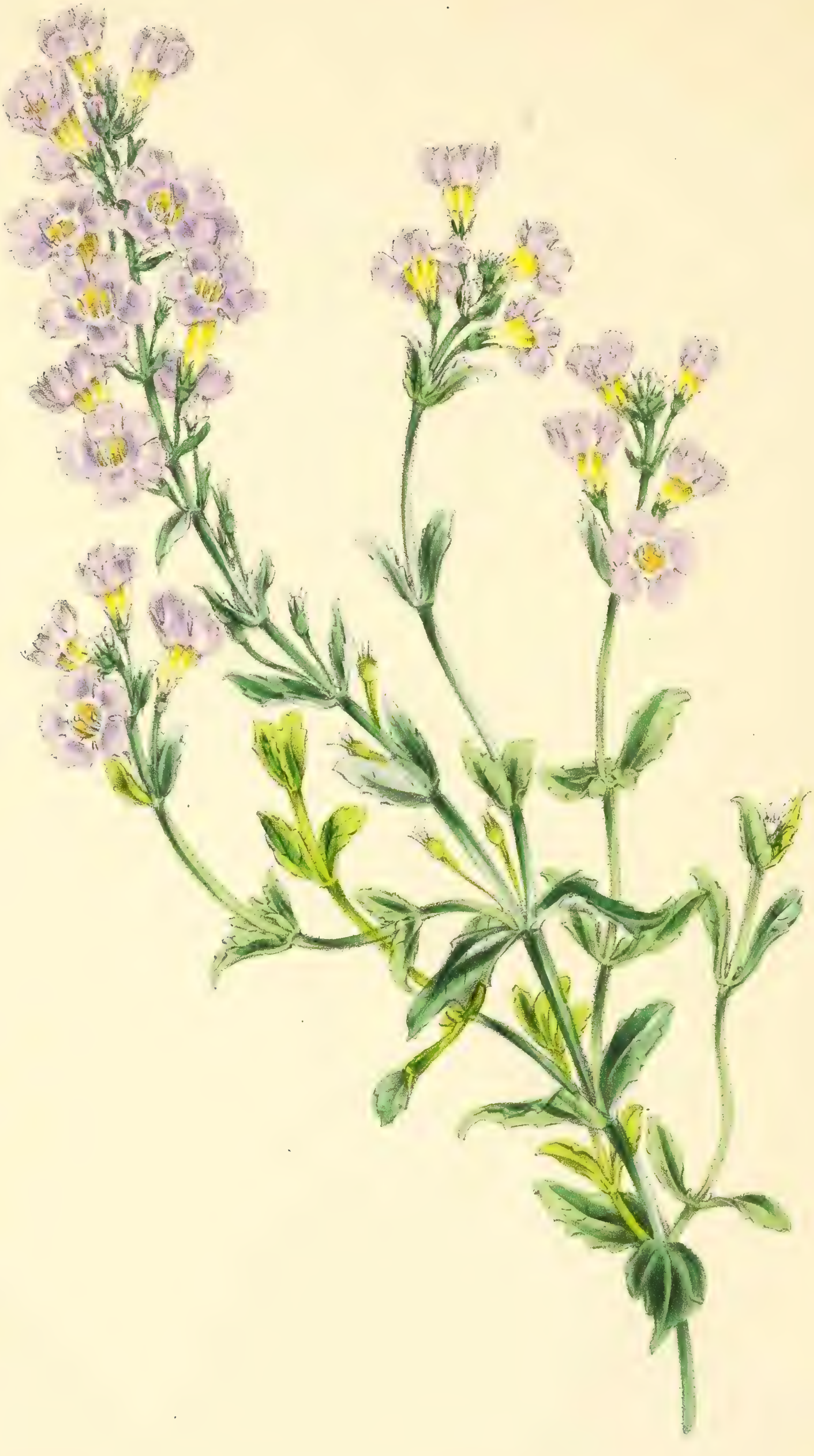
When flowering it wears somewhat of a mournful aspect; the form of its leaves, which are not exactly of the shape its specific title would signify,—their sober green, its straggling habit, the colour and drooping of its flowers, all extensively contribute to create in it the effect we have alluded to.

It is a species deserving of extended culture; not for any pretensions it has to remarkable beauty, or as possessing the qualifications that are generally understood to constitute an object of interest, but from the novelty of its appearance, and the uncommonness of plants of a similar description. Consequently its introduction amongst such as on every side force themselves into notice by the number and brilliance of their flowers, or attract attention from their splendour and magnificence, will be productive of a pleasing contrast, and set off to greater advantage the respective merits of each.

Irrespective of what we have advanced in its behalf, it has merits that entitle it to favourable regard. It grows and produces its greenish-yellow flowers freely and in considerable abundance.

The warmth of the stove is necessary to its successful cultivation, and it must not be allowed too much space for its roots, or the freedom of its growth will cause it to extend beyond due proportions. A soil composed of loam and sandy peat will furnish a suitable medium for its roots. It will propagate by cuttings.

A plant flowering last autumn in the collection of Messrs. Knight and Perry supplied the subject of our drawing.



S. Holden del. & Lith.

Chænostoma polyanthum

CHÆNÓSTOMA POLYÁNTHUM.

(Many-flowered Chœnostoma.)

Class.
DIDYNAMIA.

Order.
ANGIOSPERMIA.

Natural Order.
SCROPHULARIÀCEÆ.

Generic Character.—*Calyx* five-parted. *Corolla* deciduous, funnel-shaped or salver-shaped, rarely with a short sub-campanulate tube; throat dilated; limb almost equally five-cleft; segments obovate or roundish. *Stamens* didynamous; anthers all similar, equal in height to the throat, or exserted. *Leaves* nearly all opposite, toothed, rarely quite entire; floral ones similar, or bractea-formed, free from the pedicels. *Flowers* axillary or racemose, on longish pedicels. *Capsule* glabrous.—*Don's Gard. and Botany.*

Specific Character.—*Plant* herbaceous or suffruticose, much branched at the base; branches downy at top, panicled. *Leaves* ovate, toothed, wedged at the base; upper ones oblong, glabrous or hoary beneath. *Racemes* loose. *Calyx* hispid. *Corolla* funnel-shaped; tube hardly exceeding the calyx.

The truly beautiful little plant represented in the accompanying plate is a native of South Africa, about Algoa Bay, and the Zwartkops River, in Uitenhage, where it was found by Ecklon. It has been recently introduced to England through the continental nurseries. In several of those of the metropolis it flowered last and the preceding autumn.

In habit it is dwarf and bushy; its leaves are small, of an ovate form; and its flowers, produced very profusely, in large racemes, are of a bluish-lilac colour.

In a small, insignificant plant, such as the present is when out of flower, we seldom expect to find many qualities worthy of particular attention. *C. polyanthum* however constitutes a remarkable exception; its merits are such as will induce it to be sought for and appreciated by all who possess a garden.

It is in short a very desirable species, and capable of being made eminently useful. Treated as an annual, it may be had in flower the greater part of the year. This property considered, in connection with the colour of its flowers, either employed to decorate the border in the open air, or ornament the greenhouse, will recommend it without further comment.

To those who have to keep up a continual supply of flowers, *C. polyanthum* will be found very useful. Cultivators producing them to furnish the markets will find it a valuable addition to those they already employ for that purpose. The manner of its growth and general habit also distinguish it as being most suitable for displaying to advantage its character on rock-work, and at the same time introducing to such a situation a very pleasing object.

In cultivation nothing is much more easily managed; seeds are produced very abundantly, and cuttings strike with great readiness. It will grow well in any good garden soil. When being treated as an annual, with a view to keep up a succession of flowers, the time when these are wished to be had must regulate the period at which the seeds are sown.

The Messrs. Henderson, of Pine Apple Place, permitted our drawing to be taken from a plant in their fine collection.

Chænostoma is from the Greek *chaino*, to gape, and *stoma*, a mouth, in reference to the wide throat of the corolla.

FORCING ROSES.

To force roses well, that is, so as to retain their most beautiful green leaves in rich verdure—and how enchanting that verdure when fresh and clean!—is one of the finest arts of the gardener. During the last twenty years the rose, as respects varieties, has been multiplied exceedingly, particularly in specimens of hybrid China. There are hundreds of these exceedingly beautiful, but their beauty of flower and foliage is of a peculiar character, while such is their hardihood that they require little more than shelter under glass, with plenty of well-regulated air and light.

The varieties allied to the common Provence, red Provence, and the moss roses, can never be rivalled, and to such, attention will be directed, while referring to an article by a late most eminent horticulturist, and which has been lost sight of or overlooked.

Great improvements—some of the very greatest—have been effected by amateur gentlemen. To mention the late Mr. Knight were but to reiterate what every one acknowledges. R. A. Salisbury, Esq., F.R.S., &c., &c., was another of those eminent persons to whom we may safely look as improvers of an art which extends itself in every direction, and now produces thousands of beautiful specimens, the least surpassing the very finest that our forefathers could have hoped to discover as a rarity even in the finest collections.

We have seen great numbers of tender-leaved roses flourishing in pits excavated below the ground level, without any defect of foliage, clean, and free from that pest of the tribe, *Aphis Rosæ;* but Mr. Salisbury adopted a mode of treatment quite at variance with the one thus slightly mentioned. He found that the most successful method to obtain roses in great perfection during the winter, was one which his own experience had confirmed. It may be rendered perfectly intelligible, and of easy adoption, at a very moderate expense, by the following description.

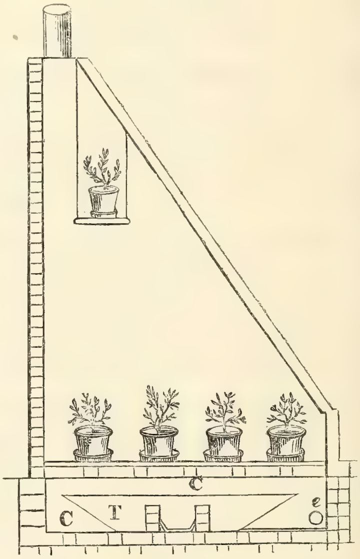
About the end of October, or beginning of November, choose strong suckers of any of the best moss or plain Provence roses, of which we have now many that the writer was ignorant of. To these may be added the damask, York and Lancaster variegated, maiden's blush, white hip, and others of similar habits. Retain, without mutilation, every fibre that can be traced, and this can only be effectually done by digging up the parent bushes. Plant each sucker in a pot about four inches diameter at the top (a good 48th size), and mark it with a name and number on the pot, with paint, so as not to be mistaken. The soil recommended is invariably hazel loam, two thirds, and vegetable mould, one third. By the former is meant that smooth velvety earth so much prized by gardeners, unctuous in texture, not binding, but compressible without contracting into a hard, cracky substance, after being wetted. The turfy sods of a common, thoroughly heated over burning wood, and thereby impregnated with a carbonous matter from the smoke, while they are freed from grubs and vermin, form an excellent fibrous loam, which modern chemistry has shown to comprise all the best earths proper, *i. e.* one or two alkalies as silicates, phosphate of lime, magnesia, and common salt, with more or less organic vegetable remains, which latter are augmented by the vegetable mould, or humus that is derived from very old manure heaps, or wood piles, the bottom portion of which is in a complete state of decay.

The mould is added by little and little, as potting proceeds, while the sucker is wound three, four, or five times round the inside of the pot, filling up with the compost, and pressing it firmly down, to keep the sucker from starting. The work of potting being complete, the pots are plunged to their brims in an open bed, in quincunx alternation, close to one another, and fully exposed to sun and air.

Mr. Salisbury made no allusion to drainage, but surely nothing can be better, or so good as bruised charcoal, in pieces not larger than hazel nuts, placed half an inch above the oyster shell or piece of crock which covers the hole.

Referring to the pots, it is said that their small size may surprise many gardeners, but the plants will produce stronger blossoms than might be expected, even the first year, if the suckers be large; and as they are to be shifted annually, it is absolutely necessary to begin with small pots. To have a plentiful supply of blossoms during December, January, February, March, April, and May, from 100 to 300 suckers must be prepared.

Mr. Salisbury gives the description of what he calls a forcing-frame, with a cut, of which the annexed figure will convey a pretty correct idea. Hot water was not known at the period when he wrote, or at least was little used; now, however, the tank *T*, in the centre of a warm steam-chamber *C*, with sloping sides and a covering slab of slate, the tank fed by a pipe which passes from near its entrance at *e*, and returning through the central channel of the tank, would give command of atmospheric and gentle *bottom* heat. On the subject of heating, Mr. Salisbury says that he prefers a flue to run through the whole floor from one end to the other, which if built thick, and the fire-place as well as chimney-top be well closed up after the heat shall have penetrated the flue, the air within will be heated with little fuel, and require no attendance during night, except in very severe weather.



The dimensions of the house or frame are five feet in width, seven feet high behind, and from six to nine inches in front, a pitch which was found to admit most sun during the depth of winter when its meridional altitude is at its minimum.

It will be plain to all, that a small boiler or even a branch pipe from some contiguous apparatus, (like the one described in our last,) would supply ample heat, with the great advantages of regular equable temperature and moisture if required; the latter, a circumstance of moment in respect to cleanliness.

In our plan the back and front walls are of brick; but in the original, wood, if preferred, is deemed admissible. A door in the middle is provided for, just large enough to admit the gardener to creep in and water the plants by reaching over them from one side to the other, without any inside walk; but the tank system would allow of a back walk.

A strong latticed floor is fixed six inches above the flue, (if that be adopted,) and on that the pots—each having a pan under it—are placed. In the tank system a bed of sand and screenings of charcoal might obviate the necessity of employing the pans.

The machinery arranged, we now come to the treatment.

All plants to be forced into blossom by Christmas day, are to be placed in the house on the first day of October, increasing the heat gradually from sixty to eighty degrees by day, but suffering it to recede much lower by night; a slight frost or two early in October will be beneficial, by causing the plants to push more vigorously after the heat is employed. Hence it follows that at the first introduction no artificial stimulus is given beyond that excited by confined sun heat.

A second set of plants intended to blossom from the middle of January to the middle of February, is brought into the house on the first of November, and a third set on the first of December; these will blossom so as to keep up the succession to the middle of March. Fresh sets are to be excited each month, supplying bloom till the middle of June, when several varieties in the open ground will naturally come into blossom.

The plan thus sketched from the clear and unambiguous description of an able writer who had neither object nor motive which could induce him to mislead, is equally luminous and feasible; and we therefore proceed to the detail of progressive secondary treatment.

It is well known that roses are exceedingly liable to be infested with a peculiar greenfly, (*Aphis Rosæ*,) and with a grub or caterpillar, the larva of the rose-beetle, which may most pertinently be called the worm in the bud. To afford means of effectually defeating the former enemy, the entire erection, and particularly the glazing of the sashes, ought to be made as nearly as possible air-tight, provision being made for giving air by close-fitting but moveable sashes in front, and corresponding trap-doors in the back wall. With these precautions:—"As soon as the plants begin to push their buds, whether any aphides appear upon the young shoots or not, fill the frame with tobacco-smoke, and do not fail to repeat this fumigation every third week till the flowers appear, smoking for the last time just before any red tints are seen on the earliest buds. The young shoots must also be carefully examined when only half an inch long, and any grubs feeding upon them destroyed."

The blossoming season being over, the plants are to be retained in the rose-house, and such as have been taken to the dwelling are to be brought back to it for a time, but never are placed in any covered back shed; for each should be encouraged to grow for about two months, or more, to make new wood; and while growing, they must constantly be supplied with moisture, and watered with a liquid manure, prepared by infusing one ounce of Pigeon's dung in a gallon of rain or soft pond-water for two or three days before it is used.

Sheep or deer's dung can be substituted, and it is likely that one ounce of genuine guano, in three gallons of water, might answer perfectly. This infusion of guano, judging by the best samples recently analysed, would comprise nearly 35 per cent. (including the water contained in the guano), of its whole weight, and contain all its soluble constituents, namely, sulphates of potass and ammonia, muriate of soda, phosphate of ammonia, oxalate of ammonia occasionally, and some urea, often to the extent of four or five per cent., besides a few hundredth parts of soluble organic matter, which confer a brown tint on the solution. Materials so potent indicate caution and watchfulness. Were recent animal matter available, an equal weight of fresh cow-dung might be added to the infusion, suffering the insoluble matters to subside, and decanting off the clearer fluid.

After May, Mr. Salisbury was in the practice of inverting the pots—especially those of the earlier bloomers—between two planks, raised and set across upon trestles, high enough to prevent the branches from touching the earth. Twenty-five years' experience, he said, had taught him the utility of this practice.

Every plant, however, after completing its new growth, is exposed to the open air in some shady situation, and kept rather dry than moist, to throw it into a state of rest: thus the routine is completed.

The importance of keeping every set of plants distinct is rigidly inculcated, so that the one introduced first into the frame in October, may in every succeeding year be again introduced on the same day, and thus with all the other sets. With a view to this orderly precision, it is proposed to trust to neither tallies nor marking-sticks, but to paint No. 1, 2, 3, &c., &c., upon the pots themselves.

Finally.—About a fortnight before the plants are to be forced, each set must be shifted into pots exactly one inch wider in diameter, and not more, turning the plants out without breaking the balls or disturbing the fibres, adding and filling up with the composition named in an early paragraph of this article.

Thus the routine can be maintained during ten years.

In *pruning*, never more than two buds are to be left on each branch, and as the plants increase in size and number of shoots, one bud only is often left on the weaker shoots, and this with a view equally to the beauty and strength of blossom, as to the health and verdure of the foliage.

A CONSIDERATION OF PLANTS GROWN IN POTS.

If the heading of our article, taken in its literal sense, is understood to convey an adequate idea of the importance of the subject upon which we are about to write, a very inadequate estimate of the extent of consequence involved in its examination will be taken.

After so much has been written upon the cultivation of plants, and the great improvement that has taken place, and is continually evidenced in their management, it may be thought almost superfluous in us to address ourselves to the subject. It is not in the present instance our intention to examine the merits of any particular method of culture, or recommend a special mode of treatment; our object is to bring under review various evils, that are entirely out of the reach of any plans of cultivation abstractedly, however great their merits.

In instituting an inquiry as to whence has originated the causes that have led to the superior state of things as regards the cultivation of plants, that in many instances is now so universally admitted to exist, we cannot hide from ourselves the fact that what has been repeatedly advanced in our pages, in conjunction with other portions of the horticultural press, has been instrumental in laying the foundation of a system upon which a superstructure of so gratifying a style has been gradually rising, and is preparing to exhibit to view its more ample and imposing features.

Unfortunately, although the tide of improvement may be said to have fairly set in, its onward course meets with obstacles so numerous and formidable in their nature, that the channel in which it has hitherto flown is, comparatively speaking, exceedingly circumscribed. Its course has at present in great part been confined to where competition—that great and exceedingly useful stimulant to exertion—has exercised its healthy influence. And here we may be permitted to allude to the benefits conferred on horticultural science in general, and especially to the cultivation of plants in particular, by the magnificent floral fêtes of the metropolis and elsewhere, but more directly those of the capital, which in its summer season afford so high and gratifying a treat. The proceedings of the Societies who have established competition on so extensive a scale, are not productive of more usefulness in rewarding merit by their prizes, than in being instrumental in bringing into notice the result of successful cultivation; thereby showing what may be done with plants, and holding up the same to imitation.

Beyond the pale of the influence created by the excited competition of the metropolis, and in establishments of the country, which are deservedly noted for the superior style in which horticultural practice is carried out, little or no effort, as indicating an advance in the right direction, is at all apparent. This is a fact the more to be regretted, from its subjecting to an experience of the unsatisfactory state of things arising from such a source, those who least deserve to be affected by it—the *real* supporters of the profession, who out of pure love to the art, and the delight its pursuit is capable of affording, still continue to countenance and encourage to improvement, in spite of the little satisfaction individually afforded them.

We imagine it will be readily conceded, that where gardening receives any attention beyond that necessarily connected with the production of fruit and vegetables; in short, where flowers are held in the least estimation, plants cultivated in pots engrosses a considerable share of attention. Indeed, too generally, where they constitute a prominent feature of a gardening establishment, and every means are at command that is necessary for their culture being carried to a high degree of perfection, we find no success at all proportionate to the advantages under which their existence is maintained.

The circumstances which tend directly to the creation of a state of things so highly unpropitious are various, and in the majority of instances wholly overlooked. In proceeding to point out the principal errors which abound under the circumstances we have alluded to, the most evident is in a greater number of plants being endeavoured to be grown than the accommodation at command justifies. In other words, the recognisable principle seems to consist in an attempt to obtain, and keep alive, as great a number of genera and species as possible, rather than the cultivation of any, or a convenient number well. Under the ancient system of management, which too extensively prevails as a modern one also, such a practice was considered highly creditable. Hence, the appearance of a plant-house presented an object formed by the plants collectively, instead of each specimen constituting a complete feature in itself, and representing one of a grand whole.

Plants under such circumstances may be regarded as a collection of Botanical curiosities, permitted to exist merely on account of their scarceness. If they flower, it is a matter of chance, in place of the natural result of the course of treatment applied, or the simple accomplishment of an object, which is now sought and obtained according to various circumstances, with comparatively speaking as great certainty as mechanical effects, the result of known laws.

In connection with the evil of keeping so great a number of plants, the tenacity with which cultivators adhere to old-fashioned methods of management, only because they are old, not heeding that they have long since been exploded, is effectual in preventing the least progress towards improvement.

However much the culturist might formerly plume himself on the success which may have rewarded his efforts in accumulating a large collection, the rapid strides which distinguish the career of horticultural improvement in the present day, will not give him credit for possession only, it is necessary they be cultivated in addition to being possessed.

Abstractedly considered, the motive that induces, in any one at all connected with the management of plants, the desire to bring together as great a number of species as possible, is very laudable, and was especially so when the art of cultivation was not better understood; but the case is widely different now; one well-grown specimen, although of a common species, is more deservedly esteemed than half-a-dozen inferiorly-managed plants, although they may have the advantage of rarity to recommend them.

The view we have taken of the subject, and our ideas in reference to it, must not be looked upon as chimerical. If we have committed any error, it is in not having placed in a more unfavourable light the prevailing state of things existing in the management of plants. In no branch of the art, applying the assertion in a general sense, does more remain to be done.

Where, in numerous instances, plants are managed in so highly creditable a manner, no peculiar advantages are enjoyed that are not equally within reach of similar places, in which the opposite effects are evident. And when inquiring into the origin of its continuation, we do not discover that any censure can be consistently shown to be merited from all absence of endeavour to keep pace with the age. In some cases we might be able, indeed, to point to a train of errors of the old school, cherished immediately from unjust contempt and ignorant disregard of everything bearing the stamp of novelty.

In recommending what would effectually supersede a state of things so opposite to what ought to prevail, we cannot do better than impress upon all who seek to derive any satisfaction from devoting their attention to the culture and management of plants, and particularly those directly engaged in practically dealing with them, that the principal aim of their exertions, the point to which they should direct their whole energy, should be to *cultivate a few plants well*, in preference to maintaining a *great number alive* only. It is not sufficient that a plant can be induced to live and produce flowers, which is an object easily accomplished in a certain manner, by simply treating it as one of a whole.

In commencing the cultivation of a plant, by choosing one young, either recently raised from seed, or struck from a cutting, it should be subjected to a course of treatment as a separate individual, having individual wants that must be ministered unto, according to their several requirements, and the circumstances under which it is being cultivated. And instead of being so treated as to induce a fructiferous condition as soon as possible, it should not be permitted to produce flowers till it arrives to a certain degree of maturity. There may be some deviation allowed in this respect, in case of a new species: and whatever are the conditions to which it is subjected, *a sufficient space* must be allowed it; it should occupy a position so as to appear almost isolated. Nothing is more remarkable in the practice of the best London growers than the latitude their plants, intended to form specimens, enjoy in this respect. Under such circumstances, a plant is permitted to experience to the fullest extent the benefit of light and air, elements which are essentially necessary, as is universally known, to the healthy existence of plants, much more to superior cultivation.

Independent of the greater amount of satisfaction unquestionably derivable from plants grown in a proper manner, in point of utility, there is every reason to warrant the universal adoption of a system that indicates an approach towards what eventually leads to perfection. In the first place, so great a number of plants are not necessary to maintain an effectual display of flowers. And in respect to variety, in comparatively small collections, the advantage is on the side of the "few plants," as, under any circumstances, a very few decided colours is productive of at least the necessary contrast, and their quantity and quality will be in no way deficient, but the reverse.

Where gardening on a small scale only is practicable, the argument in favour of an endeavour to manage that little well, applies in an especial manner. It may be advanced that, in many cases, in small establishments, and those of amateurs, no space can be afforded to cultivate plants in the manner under consideration; that all available space is required to enable the necessary number of plants to be preserved in the winter, for the flower garden. We admit this is, in some degree, correct, but maintain that it is better to grow only such a number of plants as that space can permit to be grown well, however few, than make the least advance towards the other extreme. Although plants propagated, and kept merely to plant in the open air, do not come exactly within the province of our subject, the principle we advocate, in its application to them, is productive of equally beneficial results. And we may observe, in reference to these last, that so much is not done towards freeing the better descriptions of plant-erections of them, as is usually capable of being effected by judiciously arranging them, when no alternative but to admit them can be resorted to, and placing them in other structures, where they can, under proper tendance, be much more suitably preserved. However, now that glass is become so reasonably attainable, no inconvenience from these sources can be conceived to arise.

There cannot be the least possible doubt but that, the nearer approach is made to a uniformly gratifying state of things, as regards horticultural pursuits, so much the nearer do we arrive at the period when the best interests of the profession will be properly served. As soon as the results of successful cultivation and a proper application of scientific principles is as universal as it is in some instances now evident, its effects will be such as cannot fail to arrest and force themselves upon the attention of every one. Then we may be permitted to view, with a feeling of satisfaction, what now is a source of regret, only because it is not as universal as it is meritorious.

A natural consequence of a collection of plants, whether large or small, being limited to a particular number, as, if they are cultivated according to the principles we have been endeavouring to show the utility of being acted upon, they will necessarily be, the selection of suitable species will be a point requiring more discretion than is necessary in choosing them to be grown under other circumstances. This particular may, however, be safely left to the exercise of the taste of whoever selects them. Notwithstanding, it may be well to remark that those of a decidedly ornamental character will be productive of the greatest amount of satisfaction.

ON EMPLOYING THE CHINESE ROSES FOR MASSING.

Few persons are unacquainted with the common *China Rose*, *Rosa indica;* the immense profusion in which its flowers are produced, from earliest summer till destroyed by the severe frosts that indicate the approach of winter, contribute to render it as great a favourite as it is a universal one. What very largely adds to its being regarded with so wide-spread an interest, is the ease with which it accommodates itself to, and flourishes in, whatever situation it may be placed, whether it be against the walls of the cottage, its rural porch, or a less conspicuous situation in the garden of the villager.

It is for the most part usually employed in gardens as a climber, and is planted against walls or rustic arbours, and sometimes by the side of mansions, which, indeed, is a situation worthy for it to occupy. As a shrub, or in a capacity which enables it to display more freely its natural character, it is often extensively planted in the borders of shrubberies, and the less considerable parts of the grounds. But the purpose for which we are about to recommend it to be used, or species and varieties of which it is typical, is one for which it has hitherto been very partially employed. It is not generally known how eligible it is for bedding out, or growing in masses; the valuable properties that distinguish it, indeed, render it conspicuous, as eminently calculated for such a purpose; and, how it has to such an extent escaped being so employed, is a matter of considerable surprise.

Perhaps *Rosa indica minor* is the most suitable for general massing, as in addition to possessing the equally valuable properties of the common China, it is less strong-growing, as its name would indicate; for beds of small dimension it is certainly the most proper. The colour of their flowers is hardly of that decided cast that would warrant their being employed, where such a defect might interfere with the effect of a perfectly arranged parterre.

The variety under consideration, *R. indica minor*, may be introduced in masses with the greatest propriety, and with peculiar advantage to close adjacency with a flower-garden of the most refined order. There is nothing in the production of their flowers, either in point of continuance or quantity, that militates against their being used under any circumstances; in fact, their features in this respect constitute their main and deserved excellence; and the period when these are the most highly appreciable is, when all Flora's gems excepting them are laid low. Beds, or masses of these, are clothed in lavish profusion with their flowers, from early in June till a period we have previously referred to.

R. indica and *R. indica minor*, planted in isolated clumps on lawns, are seen to striking advantage if the site of such clumps is selected with judgment. The most favourable point of view in which they could be placed, is a situation where they would constitute a distinct feature; but so introduced, be it remembered, as to harmonise with surrounding objects. A belt of them planted round masses of evergreens, have a charming effect, when contrasting their showy flowers with the sombre hue of the latter. *R. indica*, placed in amongst the mass, from its climbing inclination will make its way through, and, flowering under such circumstances, has a novel and beautiful appearance.

The *Red China*, *R. semperflorens*, grows less vigorously than either of the preceding, but blooms with equal profusion, and is therefore, for small beds, probably superior. The colour of its flowers is such as to point it out as deserving to be placed in a select situation. *R. semperflorens atrorubens*, and *R. semperflorens resplendens*, are fine varieties of the last species, and equally with it adapted for the purpose stated. The species pointed out as suitable for massing, are so distinguished merely because they are so well known; any of the scores of varieties of which they are types are in an equal degree useful for bedding out, and in numerous cases, it may be, are superior.

Rosa Barclayana, a scarce but most excellent species, is truly beautiful when grown in this way. Its flowers are semi-double, of a very deep pink colour, are produced in great abundance and all through the summer, and late in autumn, in particular, produce an effect not easily described. It must be borne in mind that the common *China Roses*, and in short all the varieties in general, from being less inferior as directly regards their flowers and fragrance, are not seen to proper advantage when placed immediately in contrast with other classes of *Roses*; so that growing them in masses adjacent to the superior kinds should be avoided. The deteriorating effect of the latter only continues so long as they remain in flower, which is a very short time compared with the period the *Chinas* continue to bloom. The defect just alluded to may in a great measure be hid from view by picking off the flower-buds of those which suffer by comparison, and which indeed should always be practised to a certain extent, as it greatly strengthens the plants and induces them to flower with vigour for a longer period. The profusion of bloom is always such as to admit of its being thinned to advantage.

As the plan of employing the *Chinese Roses* for bedding out, is one that is not practised to any extent, and as there are some points in managing them under these circumstances, that may not be generally understood, but which when attended to much increases their favourable success, it may be well to refer to them.

In preparing beds for their reception, although no especial kind of soil or particular preparation is necessary, they will succeed best when planted in strong rich loam of considerable depth, on a dry bottom. And as the wood of the *Chinese Rose* is always subject more or less to injury from the frosts of winter, the best way is to cut them off close to the ground every spring. In this practice consists the secret of producing in each plant that uniformity of strength, the effect of which is visible in the harmonious proportions of the growth of the whole; a result so necessary among plants when growing in masses. At the time they are cut down there should be a little rotten dung or rich compost spread over the surface of the bed, and forked in. And in case of more than usually severe frost setting in, it may be very advisable to spread over the roots and around the " collar" of the plants, the top-dressing already referred to ; leaf-mould is also an excellent material for this purpose, and is a more efficient covering if little more than half decayed only.

R. Barclayana, as subjected to a general course of treatment, may be dealt with similarly to the more common species, but possibly is less hardy.

In first forming beds of the *China Roses*, a considerable quantity of plants will be required, and at all times a good number should be reserved in pots, that casualties may at all times be provided against. They are easily propagated by cuttings, at any period, but those taken in August and placed in a mixture of peat, silver sand, and leaf-mould, under a hand-glass, in a shady situation, will strike very readily, and by the beginning of October be fit to take up and be potted ; plunging them in coal-ashes or similar material, in a cold frame, and there effectually screening them from frost till spring, when, as early as possible, they should be planted out.

As we have already stated, the *Chinese Roses*, planted in masses, in the absence of other kinds in summer, form a splendid and exhilarating addition to the beauties of the flower garden.

FLORICULTURAL NOTICES.

NEW OR BEAUTIFUL PLANTS FIGURED IN THE LEADING BOTANICAL PERIODICALS FOR DECEMBER, JANUARY, AND FEBRUARY.

ABEˋLIA RUPE'STRIS is a small, spreading, slender-branched bush, with bright-green, ovate, serrated, opposite leaves, and pure white, sweet-scented flowers, which are produced in a manner similar to those of the *Honeysuckle.* At present it has been treated as a greenhouse plant, as which it is valuable from remaining a long time in flower ; but it is expected to be sufficiently hardy to endure mild winters in the open air. Mr. Fortune forwarded it to this country in 1844, from the Chamoo Hills in China, where he found it growing among rocks. *Bot. Reg.*, 8.

ADENOCALYM'NA COMOˋSUM was sent to the Royal Gardens of Kew, from Rio, in 1841, by J. Lynd, Esq. It is a truly fine stove climber, having opposite, ovate, sometimes rather lanceolate leaves, and bearing racemes of " large, handsome, bright-yellow, trumpet-shaped " flowers. The racemes are borne " both axillary and terminal, at first so densely clothed with large concave bracteas as to look like the large aments of the *Hop ;* these fall away before the corollas expand, except two lesser bracts upon each pedicel, but which still are larger than the calyx, and eventually fall away also." The stems are covered with brown spots, and " the leaves, bracts, and calyces beset with conspicuous pateriform dark-coloured glands," from the Greek designation of which the generic name is derived. De Candolle considers the *A. longibracteatum* scarcely to be distinct from this species. *Bot. Mag.*, 4210.

DENDROˋBIUM DALHOUSIEAˋNUM. " None of the species," writes Dr. Lindley, " exceed it in beauty, for, with the large flowers and noble aspect of the 'Musk' Dendrobium, it is enriched by two large blood-red spots on each side of the lip, which melt into a row of fringes turned towards the middle, and looking like a pair of young whiskers fresh from the curling irons of the hairdresser." *Bot. Reg.*, 10. (A figure of this species is given in Vol. xi. of this work.)

FRANCI'SCEA HYDRANGEÆFOR'MIS. This fine plant was discovered by Pohl at Olaria, near Rio Parahybuna, in 1818. Mr. Gardner found it in the Organ Mountains in 1837. He, states Sir W. J. Hooker, writing from Rio, upon a label attached to specimens of it, describes it as a shrub about four feet high, growing in rather moist places in virgin forests, and attaining an elevation upon the hills of about 4500 feet. All the species are called *Manaca* (the Indian name) by the Brazilians, and this receives the name of *Manaca dobrado.* It is a beautiful plant, but does not ripen its seeds freely. I have only been able to procure a few, which I send. "These seeds," Sir W. J. Hooker writes, "have been reared in Glasgow and Kew, and from the produce of them our present figure was taken." Mr. Gardner found, in 1840, in Minas Geraes, a species slightly different from the present; which he considered Pohl's plant, and which also Mr. Bentham considered the true *F. hydrangeæformis* of that author, looking upon the one figured as a distinct species, *F. capitata.* Sir W. J. Hooker thinks they are varieties only. A stove plant of robust habit, and low growth, with alternate, oblong-ovate, entire leaves, from six to ten inches long, flowering similar to *Hydrangea hortensis.* Flowers "large, of a fine rich blue purple, becoming paler and almost white in age." *Bot. Mag.*, 4209.

Gloxi'nia pallidiflo'ra was sent from Santa Martha by Mr. Purdie, collector to the Royal Kew Botanic Gardens, where it flowered in October, 1845. It has erect, herbaceous, green, spotless stems, opposite, broadly and obliquely ovate leaves, and flowers smaller, paler, and more inclining to blue, than are those of the old *G. maculata.* *Bot. Mag.*, 4213.

Lobe'lia glandulo'sa. "This is a hardy herbaceous plant, of the easiest cultivation, growing freely in any kind of garden soil, and not unlike the well-known *L. siphilitica,* but much less showy. It attains the height of two and a half feet, flowers in September and October, and like so many of its race, prefers a moist situation to a dry one. Elliot says that it grows in damp Pine barrens." Seeds of this plant, gathered in North Carolina, have been raised in the Garden of the Horticultural Society. It forms an undivided angular stem, three to four feet high, "covered with short hairs." Its leaves are sessile, ovate-lanceolate, and its pale-blue flowers are borne closely on spikes about a foot long. *Bot. Reg.*, 6.

Mormo'des Carto'ni is an Orchidaceous plant, with clustered pseudo-bulbs, about a span long, from the apex of which the perfect leaves are produced in threes or fours. They are narrow, linear-lanceolate, a foot or more in length. The flowers, which are numerous, are borne in oblong spikes, on scapes growing erect from the pseudo-bulbs. Their "sepals and petals are nearly uniform in size and shape, much spreading, almost reflexed, oblong-lanceolate, acute, yellow, with red longitudinal streaks. Lip equal in length with the petals, but singularly obliquely twisted; of a pale-yellow colour, with a few red interrupted streaks." It was found by Mr. Purdie, at the foot of Sierra Nevada, in the interior of Santa Martha, and sent by him from thence. Flowers were first produced in November, 1845, in the gardens of His Grace the Duke of Northumberland, at Syon, and in compliment to that nobleman's gardener, Mr. Carton, it is specifically named. *Bot. Mag.*, 4214.

Mastacan'thus sinen'sis. "This is an autumn-flowering herbaceous plant, growing from one and a half to two feet high, and forming neat little bushy tufts. It is, in a gardening point of view, of some importance, because it furnishes an abundance of rich violet blossoms, at a season when that colour, never abundant, is peculiarly rare in gardens." A soft-wooded greenhouse plant, growing wild in the vicinity of Canton, and sent to the Horticultural Society by their collector, Mr. Fortune, who found it in Chusan, and Koo-long-soo. It flowered in the garden of the Society, last October. *Bot. Reg.*, 2.

Milto'nia specta'bilis. This genus was named by Dr. Lindley, in compliment to Lord Fitzwilliam. Sir W. J. Hooker writes, "A more lovely genus, or a more distinct one, the whole family of *Orchideæ* cannot boast, and it has the advantage of its blossoms remaining a long time in perfection. With us it flowers in the Orchideous house, in the month of August." The plant is composed of a creeping rhizoma, from underneath which fibrous roots grow, and above, oblong pseudo-bulbs, which bear two terminal rather drooping leaves. The flowers are borne solitarily, on scapes a foot high; they are large, and their "sepals and petals nearly alike, all spreading, or more or less recurved, oblong, obtuse, slightly waved, white or cream-coloured, with a tinge of rose at the base." The very large, pendent, obovate lip, is of a whitish ground colour, "suffused with a fine rosy tint, deepest towards the base, and in all the furrows of the plicæ. *Bot. Mag.*, 4204.

Neptu'nia ple'na. "This curious water-plant, with sensitive leaves, has been raised from seeds recently sent from Jamaica by Mr. Purdie, and a specimen of it, from the collection of His Grace the Duke of Northumberland, at Syon, was exhibited at a meeting of the Horticultural Society, in October last. Its long spongy stems throw out innumerable thread-like roots, and, floating in the water, speedily produce broad masses of leaves, cut up into myriads of irritable leaflets." It is common in tropical America, and has been received from "Guinea, Mexico, Brazil, and various West India islands." Various names have been given to it, in consequence of the different appearances to which it is subject.

"It seems to be a perennial, and in cultivating it, water of a temperature of 80° will be required." *Bot. Reg.*, 3.

OXA'LIS SENSITI'VA. "This curious little sensitive plant often comes up among mould received from the East Indies, and, being an annual, will sometimes take possession of the soil in the garden-pots of hothouses, so as to become troublesome. It is found wild over all the tropics of Asia; or at least, if there are several species confounded under the same name, some one or other is there found." It was raised in the gardens of the Horticultural Society, from seeds sent from China by Mr. Fortune. Rumphius states, that in Amboyna the leaves are so extremely irritable they cannot bear the least breath of air upon them, which, if they experience, they close up. No such sensibility is exhibited in the plants grown in the hothouse. *Bot. Reg.*, 68.

PERISTE'RIA BA'RKERI. "The only figure yet given of this fine Orchideous plant is in Mr. Bateman's splendid work; but admirable as is his representation, even an imperial folio page does not suffice to render justice to this species of *Peristeria*. Its leaves are two feet long, and are erect, or nearly so, from the summit of a pseudo-bulb, which is from five to seven inches long. The scape emerges from the base of the pseudo-bulb, and is pendent, thus adding a foot or a foot and a half to the space required to include a whole-length figure. It justly bears the name of Mr. Barker, of Birmingham, whose collector, Mr. Ross, detected and introduced it to this country, from the dark ravines with which the neighbourhood of Xalapa, in Mexico, abounds. Like the other species of the genus, it flowers rather freely, and, as Mr. Bateman remarks, loves a powerful heat, plenty of water, and abundance of pot-room. Our plant flowered in November, 1843, in the Royal Gardens of Kew." *Bot. Mag.*, 4203.

From some peculiarity in the structure of their flowers, Dr. Lindley separates *P. Barkeri* and *P. Humboldti* from *Peristeria*, and makes of them the genus *Acineta*.

PÆO'NIA WITMAN'NIANA. Dr. Lindley writes, "A more remarkable acquisition than a yellow *Pæony*, not a pale straw-coloured species, which is only a spoiled white, but a true yellow-flowered plant, does not often occur." It was sent to the garden of the Horticultural Society, in October, 1842, from Mr. N. de Hartwiss, who received it from Abcharia, and who is director of the Nikita Garden in the Crimea.

"The species has much the appearance of *Pæonia cretica;* it is quite as hardy, grows where any other *Pæonia* will grow, and flowers in May. At present we believe that the plant in the garden of the Horticultural Society is unique in this country."

Dr. Lindley states, "We understand that twenty-five guineas was demanded for a single plant in one of the great continental nurseries." *Bot. Reg.*, 9.

RHYNCHOGLOS'SUM ZEYLA'NICUM. "A lovely little plant, sent from Ceylon by Mr. Gardner, with flowers of a bright blue, arranged in long, one-sided racemes, and leaves with singularly unequal sides, like those of many *Begoniæ*, and of a peculiarly tender green colour. The genus is *Loxotis* of Mr. Brown, in Horsfield's 'Plants of Java,' Fasc. 1, p. 102, t. 24, and the species there admirably figured and described, so much resemble the present one that at first I was unwilling to consider them distinct; but in all the many flowers I have examined there is uniformly in our plant such a difference in the lower lip, short and broadly ovate, not twice the length of the upper lip, and much shorter than the tube; in Mr. Brown's *Loxotis obliqua*, oblong or strap-shaped, longer even than the tube of the corolla, obscurely tridentate, that I cannot but describe the present as new. Mr. Brown was doubtful if his genus was the same with the *Rhynchoglossum* of Blume, but De Candolle having apparently decided that point in favour of Blume's name, I follow De Candolle in adopting it." *Bot. Mag.*, 4198.

REEV'ESIA THYRSOI'DEA. Sir W. J. Hooker writes, "The interesting plant here represented, drawn from the stove of the Royal Gardens of Kew, in July, 1845, is a native of China, and was first made known to botanists through John Reeves, Esq., a gentleman long resident in Canton, distinguished for the many services he rendered to Natural History, and Botany in particular, and in honour of whom this plant is named by Dr. Lindley. Its affinity with *Helicteres* is very striking. Endlicher forms of it, with *Ungeria*, a little group which he calls *Reevesiæ*, chiefly distinguished from *Helicteres* by the anthers being sessile. It loves a warm greenhouse, and seems to flower at different seasons of the year." A shrub under cultivation, growing three or four feet high, with alternate, broadly-lanceolate, acuminate leaves, bearing terminal corymbs of white or cream-coloured flowers, whose stigmas are a very conspicuous feature. In its native country it is said to attain the dimensions of a tree. *Bot. Mag.*, 4199.

RUEL'LIA MACROPHYL'LA. "This fine herbaceous plant is a native of Santa Martha, according to Vahl, who first discovered it. His figure, however, was taken from a starved wild specimen, and gives no idea of the beauty of the species in the hands of English gardeners. He supposed that it habitually produced two flowers on a stalk, while in fact it bears large branching forked panicles, loaded with flowers of glowing scarlet, and nearly three inches long." This noble stove plant was exhibited at a meeting of the Horticultural Society, in October last, by Mr. Carton, gardener to His Grace the Duke of Northumberland. *Bot. Reg.*, 7.

STANHO'PEA INODO'RA. Is in many respects like *S. graveolens*, but paler and scentless. "It differs from *S. graveolens* not merely in its pale scentless flowers, but other circumstances of more importance. In the parts of the flower we are not indeed prepared to point out much difference beyond the form of the column, which in this species has its side wings narrowing downwards till they disappear, while *S. graveolens* has them as broad at the one end as the other, whence its column has almost the form of a parallelogram." They differ also in the form of their flower-spikes: that of *S. graveolens* is very wide, while in *S. inodora* it is quite the reverse.

"If this species were to be distinguished by more popular characters, it might be stated to have the inflorescence of *S. insignis*, the form of *S. graveolens*, and the colour of *S. saccata*, without its dots." *Bot. Reg.*, 65.

STANHO'PEA TIGRI'NA. "Perhaps no Orchidaceous plant is more calculated to attract attention than the present, whether we consider the large size of its blossoms, their strange form and almost waxy consistence, their singular markings, or the powerful fragrance they exhale, scenting the whole stove, and almost too strong to be agreeable; but which is considered to resemble a mixture of Melon and Vanilla. The species is not now uncommon in our collections, and is said to have been introduced to them by the Messrs. Low of Clapton, from Xalapa in Mexico. Like the other *Stanhopeas*, it is easily cultivated, only requiring to be suspended from a beam of the stove in a wire basket, filled with sphagnum and other mosses, through which the flower-stalks penetrate downwards, and hang below the basket, the pseudo-bulbs and leaves being seen above." *Bot. Mag.* 4197. Of the several varieties of this species with which we are acquainted, the one here described has the most pale flowers; the various markings of the more dark ones are superb. Cultivation has a strikingly beneficial effect upon the members of the genus.

SINNIN'GIA VELUTI'NA. "This is the handsomest of the genus *Sinningia*, with large ample dark-green velvety leaves, the younger one and petioles tinged with red, very large red calyces, and large flowers. Independent of the angled or winged calyx, there is something in the form and colour of the flower and general habit that indicates the propriety of keeping the genus distinct from *Gloxinia*, with which, however, De Candolle unites it. All the species are natives of Brazil, whence the present was introduced to the Garden of the Horticultural Society in 1826." It flowered at Kew in June, 1845, is a stove plant, with short stout stems, on the summit of which its "opposite, spreading, dark-green, velvety, elliptico-ovate, broad" leaves are produced. And bearing "large, much-exserted, pale greenish-yellow, spotless" flowers, on short peduncles. *Bot. Mag.*, 4212.

STACHYTA'RPHETA ARISTA'TA. "This fine plant was detected in South America, and probably at Santa Martha, by Von Rohr, and seems to have been known to no author but Vahl, who has given so accurate a description of it in his *Enumeratio*, that the species cannot be mistaken. It has again been found by our collector, Mr. Purdie, and sent from Santa Martha to the Royal Gardens, where in a moist stove it produced its handsome dense spikes of extremely rich deep, almost black purple flowers, in October, 1845. The flowers begin to expand from below, and continue opening upwards in succession throughout the whole length of the elongated spikes. No species of this genus yet cultivated is comparable to this for richness of colour." An herbaceous stemmed plant, with opposite branches and leaves, the latter ovate and acute. The very long flower-spikes are produced terminally, and are "clothed with numerous densely imbricated orbicular ovate leafy bracteas." *Bot. Mag.*, 4211.

TACSO'NIA MOLLIS'SIMA, Dr. Lindley states, is in some respects inferior to *T. pinnatistipula*. "On the other hand, its colour is more vivid, though not, as far as our observation has gone, nearly so bright as represented in the Botanical Magazine. It has, moreover, the fault of hanging down so as to conceal what brilliancy it has, and therefore can only be grown where there is room for it to bloom above the eye." It has been raised in the garden of the Horticultural Society from seeds collected in Quito by Mr. Hartweg. *Bot. Reg.*, 11.

Veroni'ca salicifo'lia. A species introduced from New Zealand some years since. Dr. Lindley considers it the *Willow-leaved Speedwell* of Forster, who discovered it in that country. Dr. Lindley writes of it, "In all the accounts which we have of the Willow-leaved Speedwell, it is said to have perfectly entire leaves ; but in the garden plant they are serrated, or, at least, some are. We find, however, that wild specimens from Mr. Bidwill, Mr. Allan Cunningham, and others, in our herbarium, are absolutely identical with this plant, so far as cultivated and wild specimens are comparable, except that the leaves are in this instance occasionally serrated ; but as the serratures of the leaves are quite uncertain in the cultivated plant, we do not feel justified in attaching importance to that circumstance. Mr. A. Cunningham's specimens of *V. salicifolia*, which he had, doubtless, verified with all possible care, are, we think, not distinct, except in the serratures already mentioned." *Bot. Reg.*, 5.

OPERATIONS FOR MARCH.

A casual observer might imagine that in a season like the present,—one so extraordinary for mildness,—that the business of the culturist is materially curtailed. There indeed is not that continual call for his vigilance and watchfulness that a severe and protracted winter renders necessary ; but it is an erroneous idea to suppose that the necessity for activity of mind or person is in any degree lessened ; it is rather increased to a very considerable extent. As, for example, in various departments, when all nature is secured in icy fetters, many operations are unavoidably obliged to be postponed, and others, which perhaps could be performed, can, without any injurious effects ensuing, be delayed. The very reverse of this, however, is the case this season ; promptitude and precision must be the distinguishing feature in the performance of every description of gardening operation. The unusual precocity of vegetation renders it imperatively necessary, particularly in the out-door department. If there, from whatever causes, any kind of work remains to be done that ought to have been previously completed, no further delay must be permitted to attend its being finished. Beds or borders, which may be occupied with rare or valuable herbaceous or other plants, and the digging and otherwise attending to which has been postponed, to allow their various occupants to display the first signs of their recovery from a state of torpor, may be forthwith treated as circumstances may require.

Numerous hardy plants, which from their being scarce, new, or rendered valuable from other causes, and have in consequence been preserved in pots and sheltered through the winter, may be planted in patches on borders, and in masses or any situation they are intended to occupy, providing the weather is not evidently unpropitious to their being so treated. Their being planted out thus early is not only very advantageous to their welfare, as regards an efficient production of fine and profuse bloom, but it is also markedly serviceable in affording room for the hardening off of more tender plants, under the shelter they have been enjoying. Many plants that are half-hardy only, may also be similarly treated from the commencement, and in the course of the present month with equal advantage in every respect.

In fulfilling the directions just given, some latitude may be allowed, in case of a late display of bloom being required ; but in preference to deferring placing the plants out, it is proceeding on more scientific principles, is more beneficial in every way, and more effectually secures the end in view, to plant them out and remove the flower-buds till it is wished to have expanded flowers. Such a practice is evidently conducive to the welfare of the plant, from the increase of its vigour, and consequently its greater ability to produce a fine bloom at the time such is required ; while plants that are from necessity prevented being turned out at a proper time, and are still preserved in the pots in which they have been kept through the winter, are altogether perishing so far as their fructiferous usefulness is concerned.

Much may be done towards the efficient preservation of plants, that from various causes may unavoidably be prevented from being placed in their final situation at the most proper period, by shifting them into larger pots and plunging them in some suitable material ; by such means, preventing the *whole* of their root from being injured by drought or scorching sun.

Any climbers or flowering shrubs that have, in pursuance of last month's directions, been wholly or partially left unpruned, must receive attention, and not be allowed to remain uncompleted beyond the end of the month.

In the in-door departments the various work connected with plants is multitudinous, and as varied. Potting them, however, in the most extended sense of the term, is the chief business. The varied circumstances under which they are grown, render it almost impossible, in a short monthly calendar, to give in detail directions applicable to the different cases in which the operation is performed. Neither indeed is it necessary, nor would it be scarcely palatable, as it would of necessity be a repetition of directions already given in our pages, to which for particular detail we must request a reference.

In a general potting, the inmates of the stove usually first command attention, and general rules which apply to the shifting of these, as well as pot-plants in general, are such as direct that no plant should be shifted before some evidence of returning energy is manifested ; that none requiring extended room for their roots can properly, and without injury, unless in peculiar instances, have such room withheld after they have grown to a certain extent. In addition to which, it must be borne in mind that the extent of room given to the roots of any plant must be regulated according to its nature, the size of the specimen, and other circumstances under which it is cultivated.

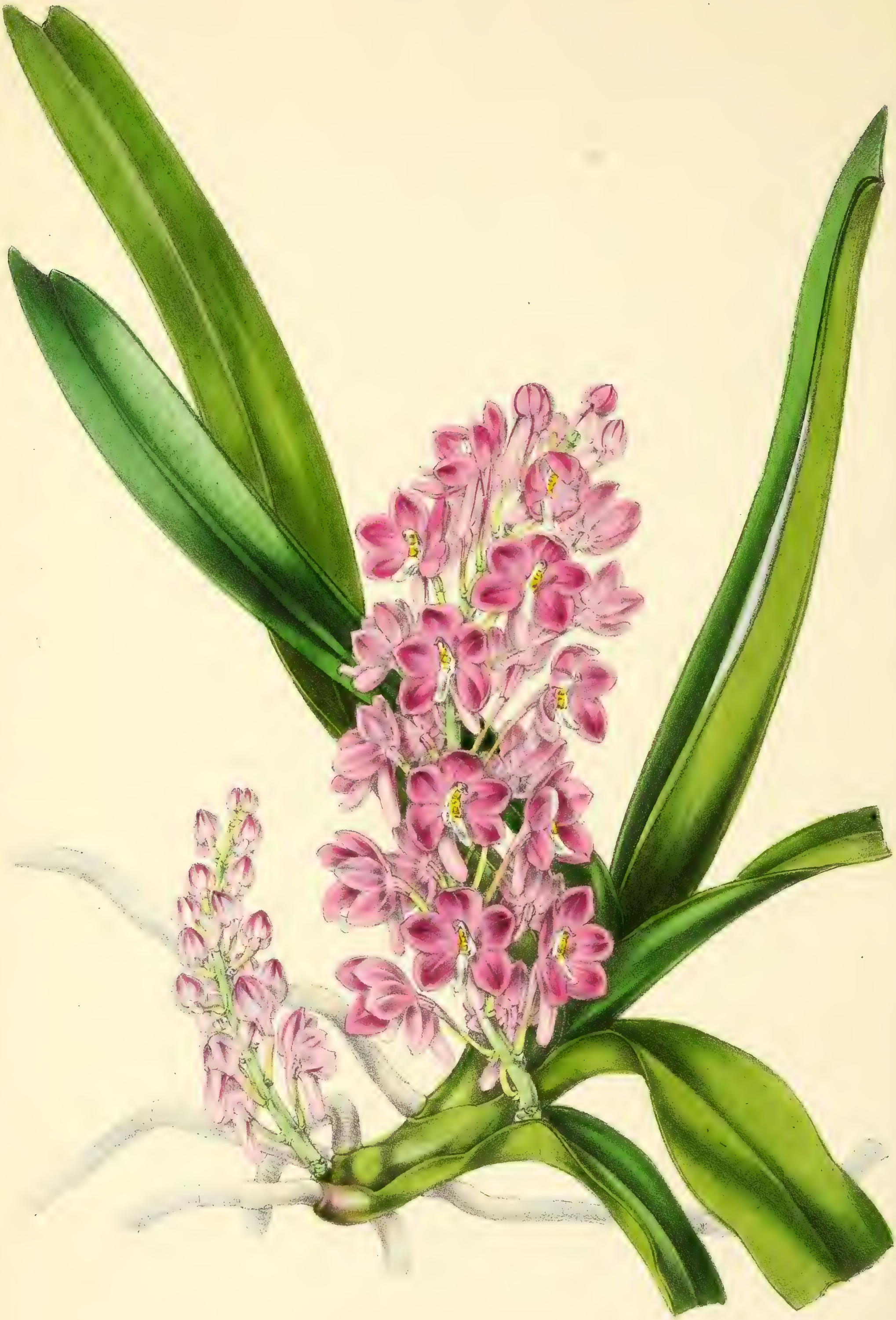
After plants are potted, they must be encouraged to grow, by being subjected to a higher temperature, frequent syringings, as well as abundant supplies of water to their roots, acccording to circumstances. These last directions, though strictly applicable to stove plants, materially apply to those of the greenhouse also ; in the latter, water must be used with more discretion, or injury from dampness will extensively prevail.

In training plants, particularly climbers, constant vigilance should be exercised, and suitable supports ought to be furnished to each, from the earliest commencement of their growth. The temperature of the *Orchideæ* house must now be sensibly increased, and moisture, in the various forms in which it is supplied, should be given more amply. The potting of the plants, where not finished, must continue to be pursued according to previous directions.

The many and numerous kinds of half-hardy plants, maintained to occupy and decorate the beds of the flower-garden, must be removed from their winter quarters, if in these they exhibit a tendency to grow, and must be gradually inured to the open air. Continual attention to the propagation of these, where necessary, potting off such as have been preserved in cutting-pots through the winter, and inducing them when potted to form substantial plants.

An immense number of kinds of seeds, according to various circumstances, will this month require sowing ; many must continue to be sown successionally ; those of various stove and greenhouse plants should be sown agreeably to their several natures ; and many intended for the open border will require sowing where they are intended to grow and flower. Some for the same situation should be sown in seed-pans, or on a slight hotbed, so as to be more early than those on the open border. Where the various seeds are ascertained to be perfectly good,—which is a point that should always be discovered,—we strongly recommend thin sowing wherever practicable.

We need scarcely refer to the necessity of the utmost vigilance being exercised in the suppression of the various pests of insects that too extensively, at this period, begin to make their appearance.



S. Holden del & Lith.

Saccolabium ampullaceum.

SACCOLÀBIUM AMPULLÀCEUM.

(Flask-formed Saccolabium.)

Class.
GYNANDRIA.

Order.
MONANDRIA.

Natural Order.
ORCHIDÀCEÆ.

GENERIC CHARACTER. — *Perianthium* smooth, spreading. *Sepals* and *petals* equal, lateral ones sometimes large. *Labellum* undivided, spurred, growing to the base of the column. *Column* erect, half-rounded, with an awl-shaped beak. *Anthers* half two-celled. *Pollen-masses* two, roundish, with an elongated appendage, and a minute gland.

SPECIFIC CHARACTER.— *Plant* an epiphyte. Stem, very short. *Leaves* very thick, distichous, ligulate, truncate and toothed at the summit. *Racemes* oblong erect, much shorter than the leaves. *Sepals* and *petals* ovate, spreading, nearly equal. *Labellum* acuminate, concave, with a short, compressed, drooping spur.

SYNONYME.—*Aerides ampullaceum.*

THE figure of this plant in Dr. Lindley's " Sertum Orchidaceum " was prepared from a specimen belonging to the Hon. Court of Directors of the East India Company, and doubtless that specimen was a naturally grown one.

The above specific character is extracted from the noble work just mentioned, but the subject of our drawing flowered at Chatsworth, in August, 1843. The difference in the two representations (that in the " Sert. Orch." and our own,) is striking evidence of the beneficial effects of cultivation, even upon the extraordinary family of plants of which this is a member.

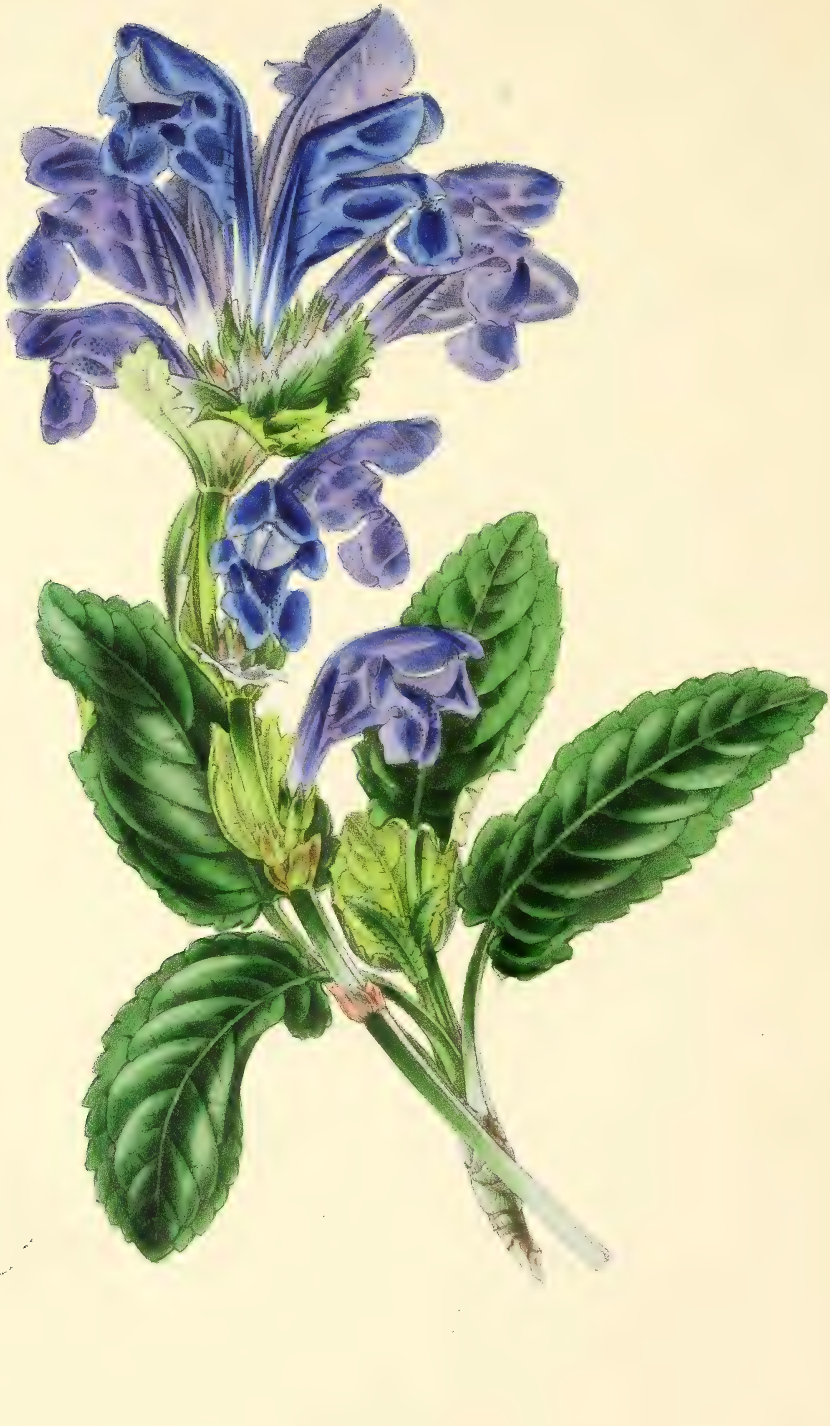
Finer as is the spike of flowers, but more particularly the individual blossoms as represented in the accompanying figure, than those produced by plants in a wild state, they are not equal to some which have since been borne by our plants.

It is a scarce and valuable plant, a native of the forests of Sylhet, and has also been found near Bemphedy. From the first-mentioned place our plants were obtained and brought over by Mr. J. Gibson, His Grace the Duke of Devonshire's collector.

Except in its flowers, it does not, in general appearance, materially differ from some species of the same and allied genera. It is of medium strength, and there is a pleasing proportion between the size of the flower-spikes and the plant, very unfrequent in the section to which it belongs. The flowers are borne on shortish spikes; and are remarkable among its division as being self-coloured, and are still more so among *Orchideæ*, from the unusualness of their colour, which is bright rose. Growing in the rustic manner Epiphytes are usually grown, and blooming, its effect, from the colour of its flowers, is novel and charming in the extreme.

It may be attached to a block of wood, and a little turfy peat or some living mosses used in affixing it, to preserve its roots till it becomes established; and, suspended in a favourable situation, should be left to fling its roots where it may, without their being molested. A high temperature, and an atmosphere saturated with moisture is necessary during the season of its growth; when in a state of repose, a nice humid warmth is all that is required.

Its increase is effected by simply detaching lateral or other shoots from the parent plant after they have formed roots. *Saccolabium* is from *saccus*, a bag, and *labium*, a lip; the labellum of the flowers of this genus is pouch-shaped.



S. Holden del et Lith.

Dracocephalum grandiflorum.

DRACOCEPHALUM GRANDIFLORUM.

(Great-flowered Dragon's-head.)

Class.
DIDYNAMIA.

Order.
GYMNOSPERMIA.

Natural Order.
LABIATÆ.

Generic Character.—*Calyx* tubular, thirteen to fifteen-nerved, straight, rarely incurved, with a straight or equal five-toothed mouth ; upper tooth the broadest, usually large, thirteen upper teeth sometimes joined into an upper lip. *Corolla* with the tube slender at the base, inclosed, or more often exserted, with a very wide throat, and a bilabiate limb ; upper lip erect, rather concave, emarginate ; lower lip spreading, trifid, the middle lobe large, and rather bifid. *Stamens* four, didynamous ; lower ones the shortest, ascending. *Anthers* approximating by pairs, two-celled ; cells divaricate. *Style* about equally bifid at top ; lobes subulate, stigmatiferous at apex. *Achenia* dry, smooth, naked.

Specific Character. — *Plant* herbaceous. *Stems* erect, pilose above. *Radical leaves* on long petioles, oblong, obtuse, crenated, cordate at the base. *Cauline leaves* few, on short petioles, ovate, all green, and nearly glabrous. *Floral leaves* orbicular, pilose ; the upper ones bractea-formed. *Whorls* disposed in oblong spikes ; bracteas large, orbicularly cuneated, deeply toothed, superior teeth of calyx oblong. *Corolla* ample, three times as long as the calyx.—*Don's Gardening and Botany.*

Synonyme.—*Dracocephalum Altaiense.*

The accompanying faithful delineation of a whole plant, of the species now given, renders a reference to its peculiar features, by describing them, unnecessary.

It appears first to have been introduced to our gardens in 1759 ; but the circumstance of its having been lost, and more than once reintroduced since that period, is more than probable. It is now far from being common.

The plant is a hardy herbaceous perennial ; a native of Siberia, very frequent upon the Altaian range of mountains in that country, hence the specific appellation *Altaiense* of some authors.

The most simple, and perhaps usual method of growing it, is to plant it in the open border, and there permit it to grow and flower, which it does during the months of July and August. When wholly allowed to take its chance in the open ground, it probably is not entitled to a more conspicuous position than the one just mentioned. But in common with a number of plants (to which we may hereafter refer) it deserves a greater share of attention than is generally given it.

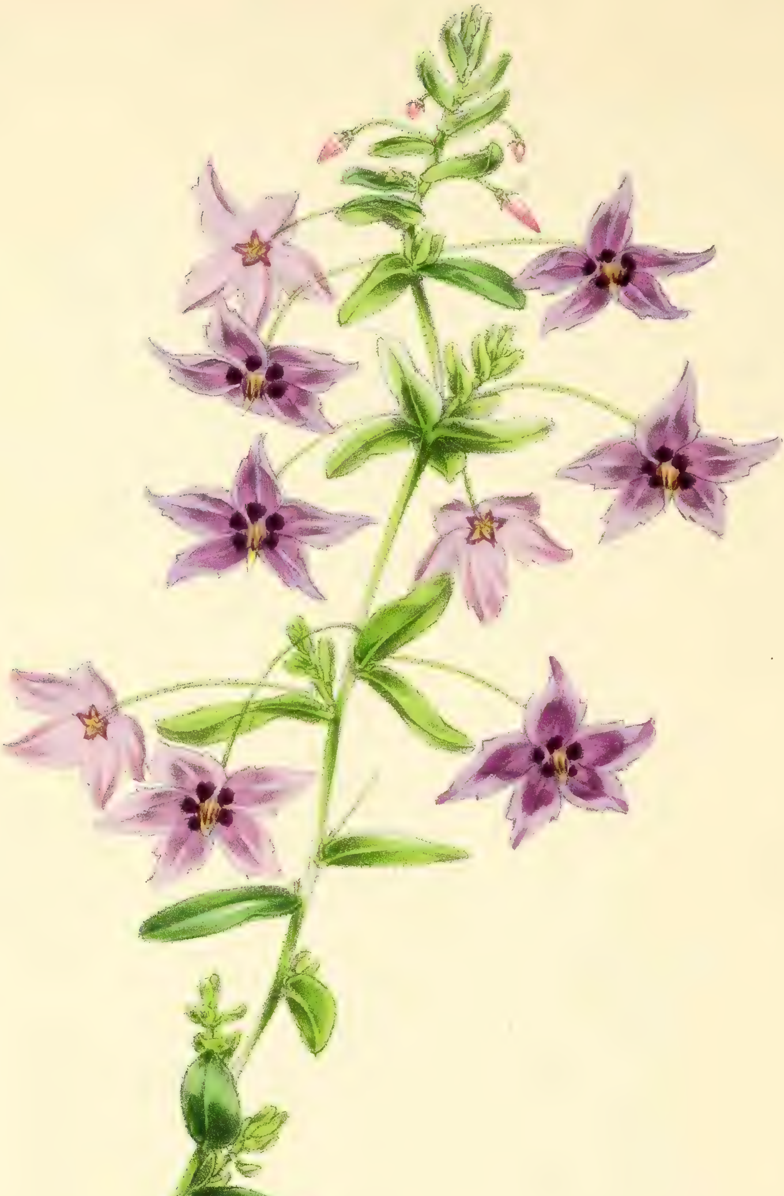
Some specimens well cultivated in pots, and when flowering, placed to display their blossoms in the greenhouse, would not, we think, be found out of place. They would there, at least, be favourably situated to gratify that inspection the attractiveness of their flowers invite, and which they deny in the open ground.

When grown in the open border and properly treated, it should be taken up in the autumn, the plants divided if requisite, and preserved in pots in a cold frame, and when replanted should be placed in good fresh soil. Some care is necessary to ensure its preservation in winter, for although hardy, in the general acceptation of the term, from being of a succulent nature, it is liable to be destroyed by frost, especially if growing in a wet situation, and is also apt to damp off: attention to keeping it dry is the surest means of preserving it. Propagation is effected by dividing the plant.

To cultivate it well in pots, the occasional shelter of a cold frame, with all the aid proper potting and good soil can afford, is all that is required.

Our thanks are due to the Messrs. Henderson, of Pineapple-Place, for the opportunity of preparing our drawing.

From the Greek of *dracon*, a dragon, and *kephale*, a head, the generic name is derived, in allusion to the resemblance the flowers are thought to bear to a dragon's head.



S. Holden del & Lith.

Tetratheca hirsuta.

TETRATHÈCA HIRSÙTA.

(Hairy Tetratheca.)

Class.
OCTANDRIA.

Order.
DIGYNIA.

Natural Order.
TREMANDRÀCEÆ.

Generic Character.— *Calyx* of four almost equal sepals. *Petals* four. *Stamens* eight; anthers four-celled. *Seeds* generally solitary.—*Don's Gardening and Botany.*

Specific Character.—*Plant* a low shrub. *Branches* downy, sometimes setose. *Leaves* oblong, scattered, opposite, downy beneath, hispid above. *Peduncles* setose or scabrous. *Flowers* pinkish-lilac.

Synonyme.—*Tremandra Hugelii.*

As *Tremandra Hugelii*, this plant has been liberally introduced to Nurseries, and other gardening establishments of this country, by Baron Hugel, of Vienna, from his magnificent collection there.

It is a native of the Swan River, (whence so many beautiful and useful things that now grace our gardens have been obtained,) and is a very pretty greenhouse plant, producing profusely for a long period its light purple somewhat star-like flowers, on rather long peduncles, at the axils of the leaves; which are small, oblong, and covered, as well as the whole plant, with hairs.

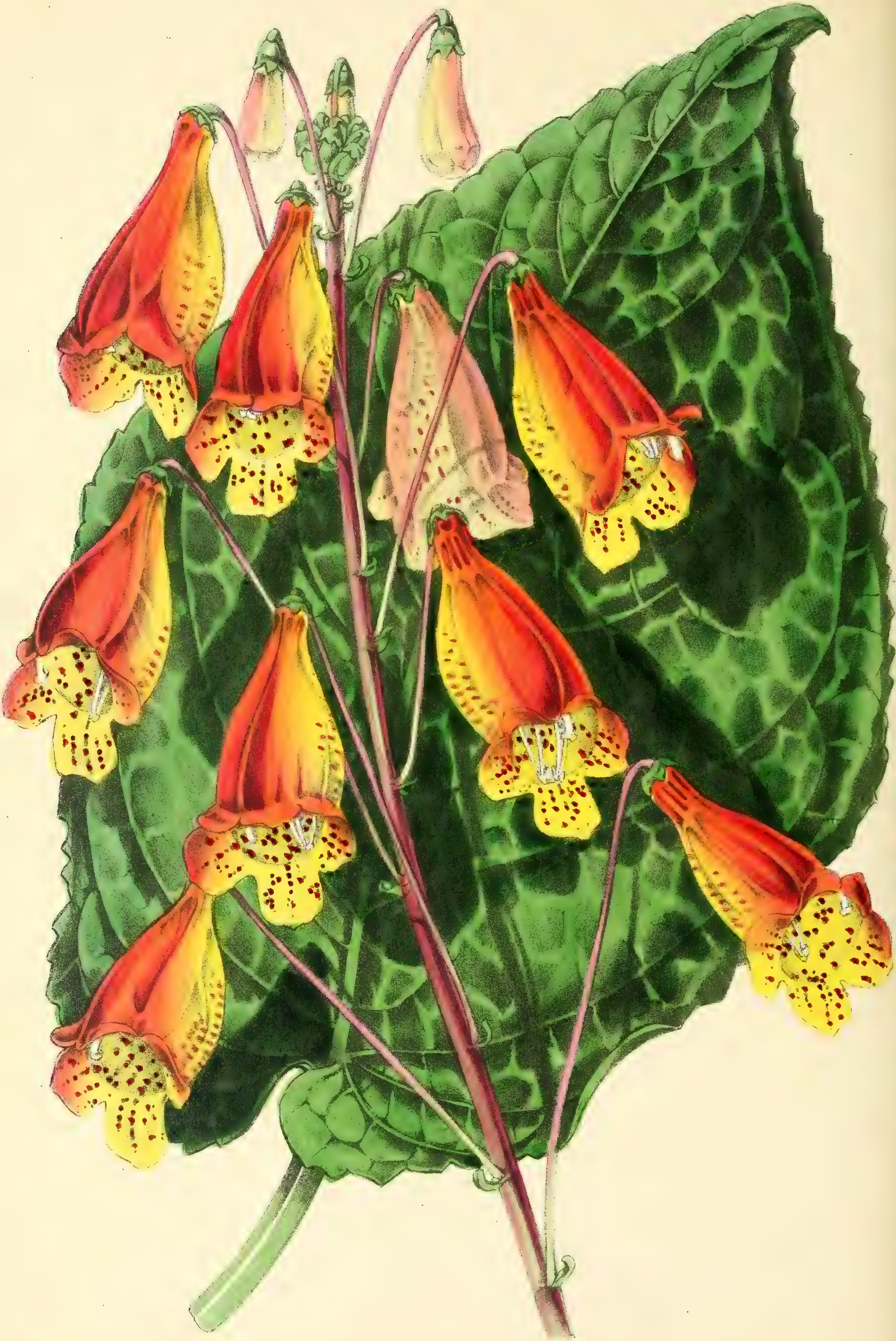
Among greenhouse plants, valuable and highly interesting as they are as a whole, and truly delightful as are many of them individually, there are a great number which enliven but a very short period of the year with their blossoms; without further alluding to such a defect, or examining whether it is one, wholly unaccompanied by any advantage which palliates its existence, we will refer to our object for mentioning it in connection with this plant; which is, to state that it, and any to which it may be similar, from their not possessing in themselves a remarkable degree of interest, are greatly enhanced in value by being associated with such as we have alluded to; as well as under such circumstances, (by their great capacity for flowering,) mitigating the displeasing effect created by the seemingly unengaging character their companions for a considerable time exhibit.

In cultivation, the treatment it requires is of the most simple description. It grows freely, and its habit is equally free and open. This circumstance considered in connection with its slender growth, renders some skill in supporting it necessary. The branches are not disposed so as effectually to hide from view any support that may be employed; and its leaves being small, and not very numerous, do not much contribute towards doing so. It should be grown in two-thirds sandy peat, and one-third turfy loam, and kept in a dry, airy situation through the winter; in summer no particular situation or treatment not applicable to greenhouse plants in general, is required for it.

Propagation by cuttings is easily effected, if suitable are chosen, and placed in a proper preparation of silver sand, fine peat, &c., in heat, and covered with a bell-glass.

To Mr. Jackson, of the Kingston Nursery, who received his plants late in 1843, from the nobleman already mentioned, we are indebted for the subject of our drawing.

Tetratheca is from the Greek word *tetra*, four, and *theke*, a cell; in allusion to the four cells of the anthers.



S Holden. del & Lith.

Gesnera Herbertii

GESNERA GERARDIANA.

(— Gerard's Gesneria.)

Class.
DIDYNAMIA.

Order.
ANGIOSPERMIA.

Natural Order.
GESNERACEÆ.

Generic Character.—*Calyx* adnate to the ovary; limb nearly equally five-lobed, free. *Corolla* semi-superior, tubular, with five gibbosities at the base; limb sub-bilabiate; upper lip drawn out, emarginately two-lobed; lower lip three-lobed. *Stamens* didynamous, with the rudiment of a fifth behind; anthers at first cohering into a round head. Glands five, or fewer, around the ovary. *Capsule* dry in the calyx, one-celled, incompletely two-valved; placentas two, parietal, many-seeded. *Seeds* scobiform. —*Don's Gardening and Botany.*

Specific Character.—*Plant* a tuberous-rooted perennial, tubers scaly. *Stem* round, erect, herbaceous, simple, downy, succulent. *Leaves* cordate, opposite, bluntly serrated; petiole rather short. *Flower-spikes* terminal, large. *Flowers* on long slender peduncles, drooping. *Corolla* large, scarlet above, yellow below; lower segments of limb largest, which, as well as interior of throat, is dotted with red; tube somewhat inflated.

This remarkably fine *Gesnera* is a native of South America, from whence tubers of it were imported by the very Reverend the Dean of Manchester, and forwarded more than two years ago to the Messrs. Rollisson, of the Tooting Nursery, by whom it has been sent out: and who, previous to its being known to be the present species, conceived the intention of naming it in compliment to the gentleman from whom they received it. Hence the name the accompanying plate bears, which was engraved in accordance with the intention above alluded to.

To the obliging attention of R. G. Lorraine, Esq., of Wallington Lodge, Carshalton, we are indebted for the opportunity of preparing our drawing, which was executed last autumn from a delightful specimen in the possession of that gentleman.

As combining all the features of excellence that distinguish the genus *Gesnera*, this really splendid plant is unequalled among its congeners. Possibly in some individual particular, (as the richness of its flowers, beauty of foliage, &c.,) it may not be able to compete with all the members of its family; but in elegance and general character it is wholly unrivalled.

It most nearly resembles *G. zebrina*, has not, as may be imagined, the finely marked foliage of that species, but in general aspect there is evident resemblance; and, with the exception just referred to, it not only possesses all the properties of the species under comparison, but does so in a more eminent degree; and is devoid of its stiffness and formal appearance.

In its habit is combined all the freedom of character of the more graceful *Achimenes*, with the sterling nature and substantial worth of the *Gesneras*. Dwarf-growing, its leaves heart-shaped, and under favourable treatment, fine large glossy green—the flower-spikes terminally borne, of great size in proportion to the plant, with large flowers, that strongly remind us, by their colour and marking, of *Achimenes picta*, and supported by long slender peduncles, in a peculiarly free and graceful manner—constitute it when flowering, in the most extended sense, a beautiful object; added to the excellent traits just described, the freedom with which plants not six inches high produce fine spikes of bloom.

The kind of treatment usually applied to *Gesneras*, is productive in this of great luxuriance. Perhaps a less highly stimulating process of culture is the most suitable. It is propagated with the greatest facility by its leaves, or portions of them and the stem, and by tubers.

To Conrad Gesner, a celebrated Zurich botanist, the genus was dedicated by Linnæus.

THE CONSERVATORY.

Our attention has, of late, been directed pretty extensively to the subject of "forcing" or propagation-houses; and to the most efficient distribution of heat in them, consistent with a true but liberal economy. We have been kept on the *qui vive* by an hypothesis lately started by the advocates of a new, or rather almost solitary mode of excitement, called the Polmaise; a system which every attempt at elucidation involves in still greater perplexity. We shall always be happy to welcome real improvement; but as we are quite sure that a certain quantity of burning fuel can evolve only a given definite volume of heat, although the distribution of that volume may be infinitely varied, it becomes extremely difficult to believe that one solitary, centrally-placed stove—were it even heated to whiteness—could, by any possibility, radiate and disperse its heat *equably* throughout a house of very moderate dimensions. It is the praise of hot water that, provided the flow and return be regular, the temperature at any part of an erection, however long or broad it may be, will approach to something like a true mean. While, therefore, we cannot understand the principle recommended, or feel the truth of the explanations laid before the public, it will be prudent and liberal to withhold any strong opinion.

At present, indeed, the subject would be inadmissible, as the erection specified in the above title could not admit of any experimental attempt to introduce the machinery used at Polmaise.

The Conservatory is pre-eminent as the most elegant and useful of all other erections for the cultivation of exotics. It is noble, and truly adapted to a great and first-rate place; but, on the other hand, it has difficulties peculiar to itself, and which demand the utmost skill and attention of a superior gardener. The conservatory is designed to receive plants which, being grown in suitable soils deposited in prepared borders, unrestricted by pots, boxes, or tubs, are enabled to expand their roots, and to produce great developments of members above the surface. Such is the object of the pure conservatory; and therefore plants are introduced into it which, by attaining a size approaching to that of their natural growth, display beauties of form, foliage, and bloom, that are inadequately represented by the dwarfed specimens cultivated in the ordinary greenhouses, &c.

But although, in the strict sense of the term, this erection is confined to the introduction of large plants, great freedom is assumed by gardeners in general; and therefore, while we observe a central bed for the reception of tall-growing shrubs, or even trees, we perceive a great variety of potted plants standing on the paved floors, and others, of still more limited size, arranged upon trellises. Thus the garniture of the conservatory is usually of a miscellaneous character, and hence one of the causes of that heterogeneous mode of form and structure which is of common occurrence.

The plants which are adapted to genuine conservatories are such as ought never to require a higher artificial temperature than 50° or 55°; for as the most beautiful and graceful tribes of exotics are natives of temperate climates, many of which are at least half-hardy, it would be altogether out of keeping, as trenching upon the plant-house and stove, to excite any degrees of heat beyond those stated above; but not as yet to dwell on the subject of heat, it will be more appropriate to notice the preparation of the beds and borders; and herein we derive considerable assistance from an article written some years since by a Mr. Peter M'Arthur, which describes the conservatory erected at the Grange—a famous seat of the Lord Chancellor Hyde—esteemed one of the finest works of Inigo Jones, and now, we believe, the property of Lord Ashburton. The whole inner expanse of the erection was great, being divided into two equal beds, each 15 feet 6 inches wide, under a double-span glazed roof, one to each bed, and of proportionate height and length. It is seldom one can meet with a conservatory of such capabilities; and therefore, if it can be shown that by scientific and adroit arrangement a very large erection can be made perfectly available to the object contemplated, it will prove encouraging to those who, in these cheap times, with a vast increase of scientific knowledge, attempt to erect with far more limited means.

It is astonishing how much money has been expended upon structures which are proved to be either worthless or utterly incapable to effect the purposes for which they were built. There are three we know of, and not remote from each other, and totally dissimilar in form and capabilities; one—nearly thirty feet high at the back wall, with sashes of a very steep angle sloping to the front—lies between two brick erections, and jammed, as it were, into the recess so formed as with an express object to render the conservatory, and the plants it contains, dark as twilight; another has the form of a heavy, large greenhouse: both were built at a large expense. A third is circular, lighted by sliding upright window-sashes, like those of a dwelling, and by a noble glazed dome at top; it has also two square lobbies of approach, the whole paved with Portland stone. Heated by an immense brick oven, the heat from which warms the air that passes through brass gratings in the floor of the circle and its two wings, the quantity of fuel employed is enormous, and yet very inadequate as to its radiating power. This erection cost, in the first instance, about 3000*l.*; yet, though handsome and beautifully situated on a noble lawn, surrounded by a light and elegant shrubbery, it is equally unsatisfactory in its appearance and operation. A fourth might be named a very beautiful little thing, so attached to a wing of the mansion of a nobleman as to become a very interesting appendage to the library. It is heated from underneath, the warm air rising also through brass gratings. The place is not properly a conservatory, inasmuch as most of the plants stand on the paving in appropriate pots or vases; there is, however, one peculiarity which gives it character. A border was prepared during the course of erection round every part of the walls, excepting at the places where the two glazed doors open, the one from the garden, the other to the library. This border was made exceedingly deep, (not less than five or six feet,) and in it were deposited a very great quantity of stable-dung, and refuse vegetable matter, and over that a foot or more of the best turfy loam. In it were planted climbing plants of approved quality, according to the taste of the noble owners; among other things two or three magnificent pelargoniums of ordinary character in themselves (*P. Zonale*, *P. globosum*, &c.), but beautiful and striking on account of the great height and breadth of trellis which they occupy. Great taste is displayed, and every circumstance tends to render this erection a perfect domestic gem.

Having thus endeavoured to show that much latitude of design and execution can be exercised, the whole effect graceful, or the contrary, depending upon the judgment of the owner or gardener, we now recur to the grand structure which constitutes the basis of the object we have in view.

The *preparation of a permanent bed of soil* in each of the two departments—the breadth to correspond with that of the span roof above it—is the main consideration, and it is thus described in the communication before us:—" The bottom of the beds are made concave, in order to convey any water that would percolate the soil, into a drain or well, of which there are three, filled with large rough flints. The subsoil being there a natural stratum of chalk, rendered any other drain unnecessary; but in many localities clay of a tenacious quality might occur, and in that case it would be wise to introduce a regular stone and tile drain, according to the plan of the most improved modern practice. These drains ought to run five or six feet below the surface level, and be conducted to some outlet by a regular fall, so as to avoid the possible contingency of stagnant water. Above the central drain the hollow or concave bottom is laid with large rough flints, and the whole space is then covered with nearly eighteen inches of broken bricks, over which—still keeping the concave form—there rests a thin layer of coarse shingly gravel. The space left for the soil varies in depth; that for the back bed being 4 feet 6 inches in the centre, diminishing at the sides to 3 feet 6 inches; the bed being devoted to shrubs of larger growth, while the bed in front, being destined to plants of humbler size, is 3 feet 6 inches in the centre, diminishing to 3 feet at the two sides. These spaces are filled up, first with a layer of thick turf laid loosely and hollow by doubling them up, keeping the grass side inmost; over these is some clean water gravel, or ballast as it is sometimes called, just enough to fill the hollows left among the turf; the layer is about one foot in thickness. The turf should be cut some time before, and be exposed to sun and air. The next layer, of about the same depth, is of turfy surface loam, with the turf chopped up, and mixed with the most rooty and heathy part of a quantity of bog or heath soil, among which some sandy water gravel was thrown." So much for what may be considered the subsoil of the beds.

The *real* soil—previously prepared—consists of light dark-coloured loam; yellow mellow loam, of a stronger quality; sandy bog, all cut with the turf laid in ridges, and frequently turned until perfectly sweet and mellow; and the same quantity of bog-soil, only cut more recently, so that the turf be not rotted down like the others.

For the bed at the back for larger trees, where two ranges are contemplated, the aforenamed soils are mixed in equal quantities, adding some sandy gravel, the mixed earths to be laid about two feet thick, and then trod evenly over; near the top the chopped turf is omitted, and sand substituted for the gravel. The *front* bed, for smaller plants, equal quantities of bog and loam are used, with some gravel, until within one foot of the surface. The gravel is then omitted, and sand used in lieu of gravel, except in places intended for clumps of Camellias, and there two parts of loam and one of bog is added quite up to the surface.

Such is the general direction for preparing the soils for permanent beds in a conservatory of the highest class. At the time when the plan was first adopted, little was known of the analysis of soils, and as to loam, the term was indefinite as possible. Even at the present day, when chemistry has taught the certain investigation by re-agents which cannot deceive, practical men cannot command the precise material, hence loam must be determined alone by a thorough investigation of texture and temperament, when wet, dry, in pots, and in the open ground. If the colour be a fair hazel, the sandy constituent be fine and soft, and the state when dry neither harsh nor cracking into fissures, the earth may be reckoned safe, and congenial to the plants. Bog-earth—that is, the heath-soil of moors—may generally be trusted, but it should always abound with white siliceous sand.

One further remark must be attended to; it is the following:—In the Grange conservatory, after allowing the ground to settle, at the time of planting, "loam, sand, bog turf, gravel, and potsherds, were used under or about individual plants, as was thought necessary or agreeable to their different natures."

We believe that the article of charcoal chips, about the size of the small potsherds usually employed, would always be found a most useful substitute; they hold water pertinaciously, yet never need be wet; and the screenings, or dust of the same material, would be found a sweet and indestructible meliorater of texture. *Bone*-dust, bone superphosphate, might also be safely and efficaciously employed; but we lack the data and facts whereon to assume a proper standard. Gardeners have never studied these matters: but by the stride that science is making in agricultural practice, we judge that it will not be long ere she lend equally efficient assistance to the garden.

Our limits will not permit any reference to the noble list of plants which constitute the inhabitants of grand conservatories: they rank among the very finest of Southern Europe, the temperate climes of America, of the East, China, and New South Wales; but as to the mode of heating, there can as yet be little question that, from its great equability of radiation, *hot water*, worked by the saddle boiler, or some such apparatus, where every particle is operative, must be preferable, or even indispensable. And, finally, it may be stated, that a *good* cast-iron boiler will last twenty years!

ON THE TREATMENT OF ANNUALS.

The term Annuals, as applied to a class of plants, consisting of a great number of genera and species very varied in point of resemblance to each other, differing materially in the extent to which one species as compared with another is employed, and the way in which they are employed, but in a very inconsiderable degree conveys an idea of their value and importance, when examined as to the extent in which they assist in keeping up an effectual display of flowers, whether in the instances of those which may be deemed not unworthy of a place in the stove and greenhouse, or in the situations in which they are more usually found,—the beds and borders of the flower-garden and shrubbery.

Undoubtedly, in no case generally considered, does the substantial effect produced by plants in flower depend for its existence or continuance upon annual plants; neither is it advisable, or under any circumstances requisite that it should. But in maintaining constant variety, and creating continual contrast, either by colour or profusion of flowers, and dimensions and style of growth of plants, can annuals be dispensed with.

Nor do gardening pursuits, or the enjoyment derivable from following them, in numerous instances exist so independently of growing plants annually reared from seed, as on a cursory glance might be imagined. Cases are not few in number in which, in connection with the commoner herbaceous plants only, the beauty of the open garden in the summer season entirely depends upon annuals. Likewise in the greenhouse, from that structure being almost wholly required in the winter for the preservation of half-hardy plants, none else can be accommodated, except it may be a few of the most common description, such as will bear almost any kind of treatment. In addition to these, perhaps some others, which are especially regarded, probably the recent novelties of the popular tribes, &c. But the whole alluded to are not, collectively, sufficient to maintain a respectable appearance in the greenhouse, in the absence of those which are placed in it for protection. Hence in the summer season, annual plants, *Balsams*, *Cockscombs*, and numerous others, are resorted to.

Another reason why annuals are employed in many instances where they could probably be dispensed with, is, because in raising plants from seed, and in giving them the necessary tendence, watching their delicate developments as they are progressively unfolded and exhibited to our admiring gaze, from their earliest origin till they arrive at perfect maturity, there is something so powerfully interesting, and in a great degree gratifying. We have been thus lengthy in our introduction to a subject, which to a common observer may seem of trifling importance, the more effectually to attract attention to a consideration of its consequence.

Notwithstanding the treatment required for plants of annual duration is very simple, even to induce them to develop their several properties in the most favourable manner, no course of management is required that is not in the power of every one to carry out. Indeed it is very probable that the circumstance of so little skill being required to produce with them results it will be our aim to show can be attained, is the main cause that has led to such results being disregarded or not understood. However, be that as it may, we have scarcely in a solitary instance met with them exhibiting the effects of proper usage; consequently not displaying the capabilities well-directed management will develop.

Setting out with the view that annuals under any circumstances cannot be dispensed with, or at least, that they are highly useful, and greatly conducive to the creation of ornamental effect among flowering plants; and remembering the frequent number of instances in which the share they have in contributing to the display of floral beauty is not insignificant, but prominently obvious; we will forthwith point out the prevailing errors conspicuously evident in too many instances where they are largely used. The blemish that in so great a degree detracts from the merits of some of our best annuals, is the shortness of time they remain really ornamental; and that their doing so, or otherwise, is influenced in a very considerable manner by the treatment they experience in being raised, is indisputable.

As in the flower-garden the usefulness of annuals is most sensibly felt to exist, we will first turn our attention to those there employed, and the kind of treatment applied to them. In selecting from among the numerous kinds the treatment of which to consider, in order to illustrate our position, we are almost at a loss; however, among the many beautiful things that force themselves upon our recollection, we may instance the lovely *Nemophilla insignis*, *Phlox Drummondii*, *Rhodanthe Manglesii*, &c., which few, we imagine, would like to be without. The first-mentioned plant is often chosen, on account of its lovely appearance and low-growing neat habit, to occupy a bed, in which its long continuing to flower, and maintain a tidy appearance, is especially desirable. The ordinary effort to induce it to do so consists in sowing it in the situation it is intended to occupy, the period when the seed is committed to the ground being regulated according to the time the plants are wished to flower, in conjunction with well preparing the soil, to induce luxuriant growth. This last point, however, so far from being favourable to a lasting display of bloom, is in a great measure the reverse, from its tendency to induce the plant, by rapid growth, to hastily arrive at maturity; which, when it has attained under such circumstances, only produces an insignificant display of bloom for a very brief period, and the energies of the plant are exhausted. This is very far from what ought and can be attained.

What is wanted, and what the whole efforts of culturists should tend to, in reference to annuals, is the creation in them of a principle of existence akin to that in perennials; and that, to a certain degree, the kind of treatment they are subjected to will produce it, we at once assert. In the instance of *Nemophilla insignis*, notwithstanding it is a plant when left to itself that endures for a very short time; its term of endurance can be considerably lengthened, by aiming to endue it with the principle alluded to. The first step of progress towards doing so would be to ensure to the plant the enjoyment of all those conditions essential to maintaining it in perfect health. That a luxuriant habit is not favourable to plants like *N. insignis*, as far as their serviceableness is concerned, may be gathered from the most commonplace observance. Indeed luxuriance in many plants is far from being a state of perfect health; and notwithstanding in numerous instances it may be desirable to create and encourage it, cases are equally abundant in which a reverse condition is necessary.

A great number of annuals being succulent, and the whole remarkable for natural freedom of growth, the injurious effects of a medium for their roots of a too highly stimulating nature is easily accounted for, and must always produce a rapid, profuse, and unfruitful vegetation; the barrenness of which, as to production of flowers, is not the worst form in which its ill effects are exhibited. The plants are forced to grow out of their natural character, and as in their simply maintaining it consists their real beauty, and in point of effectiveness their principal value, they are rendered altogether unengaging from doing so. Next to a too rich soil, allowing the plants to grow thickly, and injuriously to crowd each other, the most extensively contributes towards preventing their succeeding in a favourable manner. This is true in reference to all plants, and especially so in the case of annuals. In plants growing in masses, a very nice discrimination is required to guide an interference with the extent to which one plant is permitted to commingle with another. That with some plants much more may be done in this respect than with others, will at once be understood; and that the appearance of all would be benefited, and the development of their natural character more fully provided for by attending to it, must be admitted.

To examine here, however, the subject of properly regulating plants growing in masses no further than is necessary in reference to annuals, we will see to what extent its application directly to them will be beneficial. Supposing that a mass grown to, or approaching the dimensions they usually attain, it will be imagined that no beneficial result will ensue from an endeavour to improve their appearance by thinning out the plants and shortening the branches; neither would either operation at this stage of their growth invest them with the power of continuing to bloom, if now for the first time it is practised. But, although the practice of what has been alluded to in its application under the circumstances mentioned would be useless—when applied to prevent instead of cure the evil, it is all-effectual, and, indeed, when carried out in conjunction with wholly preventing annuals perfecting or hardly forming any seeds, is all that can be done to produce in them that capability of continuing to flower, which, when left to themselves, they possess in so small a degree. To more forcibly direct attention to the creation of this principle in annual plants, and its value when created, we will sketch a course of management which, if applied to them, will be productive of considerable improvement, if not all the results expected. To take hardy annuals generally, both the better and inferior kinds usually raised in the open ground, and whether to occupy beds or small groups on borders, the first point to which attention should be directed is the kind of soil to grow them in, and respecting which—making due allowance for the nature of the plants, as to their robust and luxuriant habit, or tenderness and delicacy—it should always incline to poverty rather than to a state of richness. Then as to the number of plants to be grown in a certain space, and the extent of room each of that number is allowed, there should in no case be more grown than the space will fully permit to develop their true character. For instance, trailing plants ought never to be allowed so to crowd together that they are forced to ascend, and in so doing clinging to each other for support, straggling beyond all bounds, and not only being wholly unengaging, but destroying each other. Plants of a shrubby character should not be permitted to grow in such thick masses, as that any of their parts suffer from want of freedom, exposure to light, air, &c.

The way in which, in a bed of annuals, the plants are regulated and confined to a proper number is, by thinning them out from their first coming up; and to confine them within due limits, the branches and shoots must be frequently stopped. This last practice by being extended to all the plants, and repeatedly carried out upon them, by shortening some of the branches of one, and all those of another; conjunctively with removing many of the flowers from this, and wholly denuding that, from which, when they are taken, no blemish in the effect is discernible; and pinching off every seed-vessel as soon as the bloom has fallen, is resorting to those practices which enable and cause annuals to continue growing and producing flowers, in degree, equal to perennials; and, in many instances, to the same extent, for one season at least, to which they do.

Among hardy annuals, there is no particular species alone, to which our remarks are applicable; although we have instanced but one, those to which, in point of hardiness, continuance of flowering, &c., it is similar, equally with those quite dissimilar, are meant.

A question naturally arising out of a consideration of this subject, and which we may refer to before we proceed, is the advantage of thick or thin sowing of seeds. We have in previous pages set forth the benefits accruing from the latter, and the ill effects of the former, and need not repeat them here. Of the superiority of thin-sowing, undeniable proof is often accidentally afforded by a self-sown seed; which, in the case of *Mignonette*, or a less robust plant, is often met with in a very humble situation enjoying the advantages of its position, and luxuriating in a manner perfectly astonishing; and, as compared with those seeds of its own kind imagined to be sown under every advantage, altogether incredible.

Generally considered, however, it is difficult, if not impossible to practice thin sowing, particularly to a great extent. In sowing the seeds of hardy annuals, the benefits of the practice may be secured, but here it is necessary to guard against error; enough seed should always be sown to ensure a sufficient number of plants for effective display, as the consequence of sowing too few, in its effects, might be of a serious nature. Seeds of the kinds of plants under consideration are not so valuable as that abundance may not be sown; and the benefits of thin-sowing is easily attainable, by carrying out a perfect system of thinning the plants.

Tender annuals, (to a brief notice of which we shall devote the remainder of our paper) have less chance of being sown thinly than the more hardy kinds. They are usually sown in seed-pots or pans, and their vegetation hastened by being placed in a little warmth ; but from their often being required in large quantities, it is found not easy to accommodate them in the manner they require. Hence, of necessity they are frequently sown unusually thick, to enable the requisite number of plants to be raised, and which, if timely potted, counteracts the evil effects of a practice necessity compels a resort to. As soon as the seed-leaves are fully developed, they should, without further delay, be potted off and placed where they will begin to establish themselves against being ready to plant out, or kept to flower in pots. For either purpose they may be treated exactly similar to hardy annuals, as far as preventing their flowering, stopping their shoots to induce them to grow bushy, &c., is concerned. And indeed, these several operations can be applied to them with a greater degree of success, and with much more facility than to hardy annuals, from their being so wholly under control.

There is no limit to the extent in which such plants as *Phlox Drummondii*, *Rhodanthe Manglesii*, &c., may be made beautifully ornamental, either as growing in pots, or in the open beds and borders, by careful potting and applying to them the course of treatment we have been recommending.

The principal error in the raising of tender annuals is the practice of allowing them to remain too long in the seed-pots or pans, &c. The amount of injury they sustain from doing so is almost incalculable. Its effects are exhibited in the damping off of two-thirds of the plants, through their being so excessively delicate and subject to injury from cold and wet. Those which may survive the damping are at best miserably straggling objects, remarkable for elongated weak growth, and in point of real usefulness they are wholly valueless.

Equally with the tender annuals, the greater part of which are raised in slight heat, and placed in the open air, those of the same description grown in pots for ornamental effect, and the more valuable stove and greenhouse species, are benefited by being attended to in the manner we have directed.

There are some annuals which will not, under any circumstances, bear the injurious effects resulting from thick sowing. One of them is the delightful little *Clintonia pulchella*, which, when thinly sown, and raised in slight warmth, well stopped by pinching off their tops, and planted out, or carefully grown in pots, will flower in a manner altogether surpassing belief.

ON FURNISHING THE PARTERRE WITH FLOWERS IN EARLY SPRING.

To a considerable extent we have already endeavoured to direct attention to the uninteresting nature, in the winter and early spring, of that portion of the pleasure-ground more especially devoted to a display of flowers, when no endeavour is made to divest it of a part of that uniformly barren aspect and cheerless appearance that is, in general, its distinguishing feature. It is the more conspicuously so with the Parterre, because in other parts of the grounds evergreens, either as isolated specimens, or masses, exist, and become as pleasing and appropriate in the winter season as their effect has been delightful and refreshing in summer.

The long season of remarkable and enjoyable weather that has so wonderfully characterised the early spring portion of this year, will have been more effectual in bringing under notice the blemish of which we complain, than the most extensive and elaborate reference to it, and the circumstances under which it exists. We have, however, independent of this fact, in previous pages, pointed to the worst features of the evil, and the instances in which it is most desirable to accomplish its removal.

What we have already recommended to produce a feeling of cheerfulness, and to detract from the monotony of the flower-garden in the winter and spring, is filling the beds and borders partially or wholly with common dwarf-growing evergreens, &c., with a slight allusion to the appropriateness of some herbaceous plants, bulbs, &c. See "Winter Gardens," Vol. xi. In addition, for a similar purpose, in the same volume, we brought forward "Pansies as Flower-garden Plants." What we now purpose immediately directing attention to has already been mentioned; bulbous, and some early-flowering herbaceous plants, the value of which, for the purpose in question, and their great beauty, has this season, in a very forcible manner, arrested our attention. Doubtless, this year they have been unusually fine, so altogether favourable and highly propitious has the weather we have experienced been for the perfect developlopment of their flowers.

It is not our intention to recommend that bulbous and other plants be employed wholly to supersede evergreen shrubs, and those already mentioned: the recommendation on their behalf extends to their being used in conjunction with them. First, as most important, *Crocuses* are exceedingly well adapted, and are really beautiful when judiciously disposed, and, as flowering in early spring, are invaluable. In themselves, in point of colour, they are a complete host, every shade, between dark purple and delicate white, *Crocuses* can boast, and, in addition, as is well known, fine yellow and gold-colour.

Flowers displaying themselves in winter and early spring, under any circumstances, are doubly effective, compared with what they are in summer; this is especially the case in the open ground, and must always be borne in mind, when arranging plants to flower at that season. In planting beds of *Crocuses*, the bulbs should not be studded all over them, or their effect, when in flower, would not be appropriate, but of too glaring a nature. The proper way is to plant them in clusters of three or four together, and the clusters six or eight inches apart; in placing them in the bed, care should be taken to induce them to describe its general outline.

The arrangement of colour, where the variety is as extensive as it is in *Crocuses*, is best left to individual discretion.

In point of effect, the *Hyacinth* is perhaps superior to the *Crocus*, though not in general availableness; the appearance of masses of it blooming at this time of year, can be better imagined than described; growing in short lines, or placed in a central position, their appearance is very beautiful. To the merits of all the early flowering bulbs that are suitable for our purpose, it would be tedious to refer. *Dwarf double Roman Narcissus*, *early Van Thol Tulips*, the *Dog's-tooth Violet*, and others too numerous to mention, are, when associated with each other for the purpose of decorating the parterre at the period their blossoms are produced, capable of creating a very lively and delightful effect. Even among the few plants instanced, there is a sufficiency, as respects the colour of their flowers, to make a most complete arrangement. In addition to those already mentioned, the *Hepaticas*, and in short any early-flowering plants, may be made available for the object in view; for, if of the most common description only, they are infinitely preferable to the chilly barrenness of the flower garden or parterre, when no attempt is made to relieve it.

What seems to militate very strongly against the use of bulbs for the purpose of flowering in spring, in those situations which in summer are required for perennial plants, is the imagined difficulty of removing them in proper time to admit the summer occupants to their places; that, however, it is not at all a difficulty, we will proceed to show. Excepting the *Hyacinths*, all the plants we have named would flower beautifully in their season, by simply being planted in the course of the autumn; all the preparation of soil for the reception of the bulbs that is required, is simply to dig over the beds, and it may be, add a little leaf-mould, &c. Once planted, they require no more care than being guarded from the ravages of mice till they have done flowering, when the whole may be taken up, great care being exercised in doing so; each should be lifted with a separate ball, preserving the whole of their roots, and replanting them in the reserve garden, till they have perfected and matured their bulbs, the whole then being taken up and stowed away. If *Hyacinths* are similarly treated, the most unbounded care is requisite to raise them with balls and replant them again; but, as will be imagined, it is hardly practicable and certainly not safe to deal with them at their removal with equal freedom with other bulbs. They had better, therefore, either be placed in such situations only as they can remain in to ripen properly, or be grown in pots, and their pots plunged, till they have flowered, in any situation they may be placed, and after flowering be turned out of their pots to stimulate them to swell off finely.

A stock of bulbs for the purpose in question might be purchased at com paratively small cost; they, however, in many places exist in common with *Snowdrops*, *Daffodils*, &c., in great abundance among herbaceous plants.

We imagine the little labour and care required to ensure the assistance of the early flowering plants referred to, in chasing away the gloom and chilly barrenness that mark the aspects of the parterre and flower-garden in winter and spring will not be grudged.

In such conspicuous situations, all the beautiful varieties of *Crocuses*, with the delicate markings of some, and the showiness of all, the fragrance of the *Hyacinth*, with its varied tints, are well deserving of any effort by which they can be attained.

Independently of employing bulbs, dwarf evergreens, &c., to relieve the naked appearance of the parterre, and any conspicuous points of view at the period we have been considering, very much may be done by planting some early-flowering shrubs of a more valuable nature closely adjoining the flower-grounds. The *Daphnes* of various kinds, *Andromeda floribunda*, early-flowering *Rhododendrons*, &c., which would not only be very beautiful during the time they flower, but trained to handsome specimens, far from being unsightly during summer and when out of flower, would create an agreeable object in contrast to the glowing splendour that at that season under good management reigns around.

FLORICULTURAL NOTICES.

NEW OR BEAUTIFUL PLANTS FIGURED IN THE LEADING BOTANICAL PERIODICALS FOR MARCH.

Allople'ctus di'chrous. *Besleria dichrous*, *B. bicolor*, *Alloplectus Schottii*, *A. sparsiflorus*, and *Hypocyrta discolor*, are names all stated to be synonymous with that of this plant by Sir W. J. Hooker, who writes:—"Of this singular stove-plant I think it will be found that the above synonymes are correct. To this country the plant was introduced from Brazil by T. G. Lorraine, Esq., and has been distributed under the name of *Hypocyrta discolor* of Lindley, in the work (*Bot. Reg.*, 1845, *Suppl.*, p. 19) above quoted." The plant is erect-growing, shrubby below, herbaceous above, with opposite, ovate-oblong, entire, fleshy leaves; and bearing nearly sessile clusters of flowers, whose calyces are dark black, purple, or blood-coloured, and corollas pale yellow, very woolly. *Bot. Mag.*, 4216.

Cu'phea strigillo'sa was found "by Mr. Hartweg on the top of the Cumbre, a mountainous ridge between Oaxaca and La Sierra," in Mexico. "It is one of those curious productions in which it would seem as if the work of Nature had stopped before it had finished; for instead of six petals, the customary number in the genus *Cuphea*, it has invariably only two, and they are stuck on one side only of the calyx, giving the gay orange and scarlet flowers a very singular appearance. These flowers look, moreover, much like those of a *Tropæolum*, such as *tricolorum*, formed on the stem of a *Lopezia*, an odd similarity, which may be recommended to the attention of the ingenious author of the Vestiges of the Natural History of the Creation." Syn. *Cuphea pubiflora*. *Bot. Reg.*, 14.

Cycno'ches Loddige'sii. "This very striking *Orchideous* plant, the species upon which the genus is founded, is a native of Surinam, and was introduced from thence by Messrs. Loddiges, through J. H. Lance, Esq. As may be expected, it requires great heat and moisture, and, thus treated, it flowers readily in the autumnal months, at which season our specimen bloomed in the Royal Gardens of Kew. The column, long and slender and much convex, has not inaptly been compared to a *swan's neck*, whence, as is well known, the generic appellation is derived ; but to us it appears to have a still greater similarity to a Cobra da Capella, the swollen and dilated apex below the anther very accurately representing the inflated throat of that dreaded reptile, while the colour and marking serve to increase the resemblance." This plant, when not flowering, very much resembles some of the *Catasetums*, *Mormodes*, &c., but its flowers are very extraordinary, and are so in consequence of their shape, which it is difficult to convey an idea of by describing. The colours of the flower are dingy, and not remarkable. *Bot. Mag.*, 4215.

Catase'tum callo'sum. *var.* grandiflo'rum. "This singular plant," writes Sir W. J. Hooker, "of which the flowers may, I think, be likened to the body and legs of a great spider, is from the rich collection in Syon Gardens, and was received by His Grace the Duke of Northumberland from Columbia. Notwithstanding the large size of the blossoms, and the slightly dissimilar form and different colour of the lip, I fear it can only be considered a variety of *C. callosum* of Dr. Lindley, and I am the more confirmed in this opinion from afterwards receiving from Syon a smaller state of the same plant, exactly, as it were, intermediate between the two. Its long pendant spikes of dingy purple flowers, of which the floral coverings are singularly divaricated, the three upper pieces being applied to the back of the column, the two lower to the under side of the lip, are produced in December." *Bot. Mag.*, 4219.

Dendro'bium adu'ncum. Flowered in the establishment of the Messrs. Loddiges in 1842 ; it was received by them from Dr. Wallich, who sent it from Calcutta. "In some respects it is allied to *D. Pierardi*, especially in its small pink flowers and manner of growth ; but it is more closely related to *D. moschatum*, of which it may be regarded as a feeble imitation. It is, however, widely different from both, and is especially known by its half-transparent flowers, of the most delicate texture and clearest tints. Why it is called *D. aduncum*, or whence it comes, we know not." *Bot. Reg.*, 15.

Fugo'sia he'terophylla. "A very pretty shrub, named by Cavanilles in honour of Bernard Cienfuegos, a Spanish botanist of the 16th century, and now, we believe, first cultivated in England from seeds sent home from St. Martha, by our collector, Mr. Purdie, in 1845. At the Syon Gardens, where our figure was made, plants flowered in the same year. The general appearance of the blossoms is not much unlike those of *Turnera ulmifolia ;* but when the centre of the flower is examined, each of the five petals will be found to have a rich scarlet or blood-coloured, pectinated spot, the teeth or rays arranged with the most perfect regularity." The plant is "a rather twiggy, erect, branching, glabrous shrub," with "alternate, somewhat remote, upon rather long slender footstalks, oval or oblong leaves." The flowers are produced at the axils of the leaves, on long peduncles, and are composed "of five broadly cuneate, oblique and imbricated almost twisted petals, tapering into a short claw of a yellow colour, with a deep blood-coloured blotch." *Redontean heterophylla* is a synonyme. *Bot. Mag.*, 4218.

Gesne'ria Honde'nsis. "A very handsome *Gesneria*, new to our gardens, discovered by Humboldt, at Honda, New Grenada. Tubers were sent to the Royal Gardens of Kew, by Mr. Purdie, early in 1845, one of them, from which the drawing is here made, flowered at Syon Gardens in December of the same year. The rich scarlet of the flowers, yellow at the mouth, remind one of the well-known *Manettia bicolor ;* but here the red is due to the shaggy hairs, altogether of that colour, with which the tube of the corolla is clothed for almost its whole length. It requires the same kind of treatment as other species of this fine genus ; and it appears that, by a little management in forcing or retarding the tubers, they may be made to blossom at almost every season of the year." *Bot. Mag.*, 4217.

Ko'psia frutico'sa. It is stated by Dr. Roxburgh that this plant was introduced into the Botanic Garden of Calcutta, from Pegu, and there flowered constantly ; that "its flowers are like those of *Vinca rosea*, but larger, and faintly fragrant. It is, in fact," he continues, "one of the most ornamental shrubs in the garden." "This," writes Sir W. J. Hooker, "is not saying too much, for certainly in cultivation this plant is a great ornament to our stoves, and though not in constant flower, it blooms several times in the year and at very uncertain seasons, and continues some time in beauty." De Candolle separates it from the genus *Cerbera*. It is a native of the peninsula or islands of Malay ; and was probably first introduced into Europe by Messrs.

Whitley and Brame. Flowers are produced on very small plants; and under favourable circumstances it grows to a large size, continuing to flower very freely. It has opposite, oblong-lanceolate leaves, and produces its flowers in terminal corymbs. *Cerbera fruticosa* and *Calpicarpium Roxburghii*, are synonymes. *Bot. Mag.*, 4220.

LANKESTE'RIA PARVIFLO'RA. "*Lankesteria* is a genus of Acanthads, allied to *Eranthemum*, from which it differs in the absence of sterile stamens, and in the capsule containing but two seeds." It is a profuse flowering plant, with small ovate leaves, and bearing axillary and terminal clusters of bright yellow flowers, whose calyces are very long, of a brownish purple colour. Mr. Whitfield brought it from the west coast of Africa, where it is a native. *Lankesteria* is after Dr. Edwin Lankester, F.R.S., a gentleman of high attainments in a knowledge of botanical science. *Bot. Reg.*, 12.

MULGE'DIUM MACRORHI'ZON. "This, although its flowers are but those of Succory, is nevertheless a charming perennial, with numerous trailing stems two feet long, and scarcely rising more than a few inches high. For decorating rock-work, it is unsurpassed among autumnal perennials." It is a plant very impatient of moisture, is hardy, but requires keeping dry through the winter, to insure its preservation. It produces its blue flowers very freely in September and October, and "was raised in the garden of the Horticultural Society, from seeds received from Dr. Royle, and stated to have been collected in Cashmere or Thibet." *Bot. Reg.*, 17.

PTEROSTI'GMA GRANDIFLO'RUM. "This is one of the new introductions by the Horticultural Society. It was received from Mr. Fortune, who described it as a blue-flowered herbaceous plant, growing on hill sides and near streams, on the island of Hong-Kong." In a wild state it flowers very profusely, and is much more interesting than it has at present become under cultivation. The description of it in the Journal of the Horticultural Society states, "It is a perennial, covered all over with slender spreading hairs. The stems are round, the leaves are opposite, stalked, ovate, crenated, very much marked with sunken veins, and deep green. The flowers, which are nearly as large as those of a *Digitalis*, and of the deep colour of *Gloxinia violacea*, grow singly in the axils of the leaves, than which they are considerably shorter." It has sweet-scented leaves, and hitherto has been treated as a stove plant, but is expected to prove sufficiently hardy for the green-house. Syn. *Gerardia glutinosa*, and *Digitalis chinensis*. *Bot. Reg.*, 16.

RU'ELLIA LILACI'NA. In some instances bears the name of *R. longiflora*. "It has been already figured in the "Botanical Magazine," under the name of *R. lilacina*, but the specimen examined by Sir W. Hooker must have been in a weak unhealthy condition, for its flowers were axillary and sessile; whereas, when the plant is really in a natural state, they are developed in panicled spikes whose stalks are longer than the leaves, as is shown in our figure. It is only then that the species acquires its natural beauty." *Bot. Reg.*, 13.

NEW OR INTERESTING PLANTS RECENTLY IN FLOWER IN THE PRINCIPAL SUBURBAN NURSERIES AND GARDENS.

ANSE'LLIA AFRICA'NA. This beautiful and very rare plant has recently flowered in the Messrs. Loddiges' collection. It is a native of Tropical Africa, and was found by Mr. Ansell, a gardener, in honour of whom it is named, and who found it growing on the Oil Palm, in the island of Fernando Po. Mr. Ansell went out with the Niger Expedition. The plant is rather robust growing; its pseudo-bulbs are stem-like, closely sheathed, and indeed apparently composed of rather short lanceolate leaves. The flowers are borne in panicles, which are branched and drooping; the sepals and petals about equal in size, prettily spotted, as well as the lips with light purple spots on a brown ground.

APHELA'NDRA —— ? A fine plant, supposed to be of this genus, is now, and has some time been flowering in the Nursery of the Messrs. Rollisson, of Tooting. It is strong-growing, has large broadly-lanceolate opposite leaves, and bears a terminal spike of light crimson, labiate flowers. The spike is remarkably long, and continues producing in an extraordinary manner its rather small flowers successionally.

AZA'LEA A'LBA MAGNIFLO'RA. A new seedling raised by Mr. Green, gardener to Sir C. Antrobus, Bart., and exhibited at a recent meeting of the Horticultural Society, Regent Street. It is a very promising variety; its flowers are large, white, and some singularly marked with a streak of bright pink. It is very compact growing. *A. violacea elegans*, another good variety from the same source, and exhibited at the same time, has fine bright flowers, with a good deal of a violet tinge, and is more free and open in habit.

CYPRIPE'DIUM, *vars.* Two members of this genus were exhibited at a late meeting of the Horticultural Society, Regent Street, by the Messrs. Veitch of Exeter. They were from Java, and but slightly differ from *C. barbàtum,* the flowers of one are much paler, with narrower sepals and petals, and much more narrow leaves than that species; the other had also rather narrower leaves, flowers very similar, but rather more vivid in colour.

CAME'LLIA JAPO'NICA; *var. Beauté Suprême.* A fine seedling, recently flowered by Messrs. Lane, of Great Berkhampstead, of good shape and size, and pale waxy rose colour.

E'PACRIS HYACINTHIFLO'RA. Among many pretty hybrids of this genus, raised by the Messrs. Henderson of Pineapple Place, one to which the above appellation has been given by those gentlemen, is deserving of particular notice. The name is well chosen, for there is a much greater resemblance between its flowers and those of a Hyacinth, than might be imagined; they are a lilac-rose colour, large, and waxy in appearance. The plant is rather robust-growing, and of free habit.

FRANCI'SCEA HYDRANGÆFO'RMIS. Many plants of this beautiful species, on a recent visit to the Messrs. Rollisson, attracted our attention, principally from such small plants flowering, but more from the large heads of bloom they bore, which on this plant is nearly white, on that purple, lilac, &c.

OPERATIONS FOR APRIL.

NOTHING this month requires more carefully attending to than the numerous plants raised from seeds, whether they be stove, green-house, hardy, or annual; the latter constitutes, in the prevailing number of cases, the major part of those to be dealt with. Of such as have been sown to grow in groups on the open borders, the hardy and commoner kinds, few, till towards the end of the month, and not then if the weather is unfavourable, will have come up; such as have, and can as far as their numbers and strength indicate be depended upon for a future display of flowers, must be watched, shielded from injury in case of frost, and the ravages of any description of insects. Where they have arisen so thickly as to require thinning, that operation must be performed without delay. The plants thinned out will serve to fill up groups in which, from any cause, failure or loss may have occurred; or to plant in reserve beds, and there induced to form strong plants, to employ successionally, or resorted to in case of casualty. Any of the description under consideration, sown where vegetation would speedily ensue, for the purpose of securing strong plants, an early bloom, &c., must not experience any neglect in being potted off, or pricked out. For further particulars respecting the treatment of annuals, we request attention to our article upon the subject.

Where stove and green-house plants are being raised from seed, the many causes which may render them valuable, should also insure their being properly attended to. Whatever are the kinds, and whether thin sown, or from necessity otherwise, they should be potted off while small plants. Any seeds still unsown, should not remain so beyond the end of the month.

Among plants, the *Orchidœa* family must receive particular attention. The majority will now be making their annual growth; consequently, no cessation in a supply of those conditions suitable to its perfect development must be allowed. Heat and moisture are the main elements necessary to produce such conditions; considerable skill, however, is required to insure their proper application. Various plants require a very varied amount of each, if even all should be vigorously growing. To the Epiphytal section, a high temperature, highly charged with moisture, is quite necessary when they are growing; therefore, where one structure only is devoted to the cultivation of the whole, Epiphytes should be placed in that part of it where they will experience conditions most favourable to their welfare. The other sections must be treated according to their known requirements, as far as circumstances will permit. In no case must moisture, either in a vapour state or in water applied to the roots of the plants, be allowed to abound with a low temperature existing. Its lodging about the young growth must also be prevented, to avoid all chances of injury from damp. Mischief ensuing from the ravages of insects must be anticipated and prevented.

In the stove a high degree of temperature may be maintained, if in conjunction with it a proper amount of moisture is secured ; the various stages of growth of the plants is the best criterion by which to regulate its application. A healthy and substantial growth is now properly encouraged, rather than regard being had to a display of flowers. In case of individual specimens or particular plants flowering, and their bloom is wished to be preserved, they had better be removed to where such can be effected, as the atmosphere which ought to exist in a stove would quickly destroy it. Plants growing vigorously may be stimulated to maintain that vigour ; and then proper staking, disbudding, and training, according to various circumstances, must not be lost sight of, but regularly attended to.

New Holland and greenhouse plants in general, now begin to be delightfully interesting ; a display of bloom amongst them, is more general than it is with the inmates of the stove ; consequently its maintenance must be duly regarded. Newly potted plants, and those growing, will require a nice attention to a supply of water being administered to them ; frequent syringings, a perfect regard to cleanliness and admission of air copiously, is greatly conducive to the welfare of the tribe of plants under consideration. To them, as to all plants, it should ever be remembered that the more fresh air is admitted, the more likely they are to do well, if it is done without the temperature of the structures in which they grow being improperly lowered, and its entrance at any time in cold streams is prevented.

In the conservatory, whether stove or greenhouse, the most particular attention to neatness and order should be discernible. Every care must be bestowed upon plants flowering in it, to preserve their bloom ; and when it is faded, if they are portable, they should be placed where they will be favourably situated to perfect their growth.

Perennials, half-hardy, and other plants, must be progressively inured to the open air ; and finally, towards the end of the month, many may be planted in their summer quarters. In planting any pot-plants in the open ground, a point that should be fixedly kept in view, is to see that the ball of the plant to be turned out, is perfectly moist, particularly if the plants have many roots.

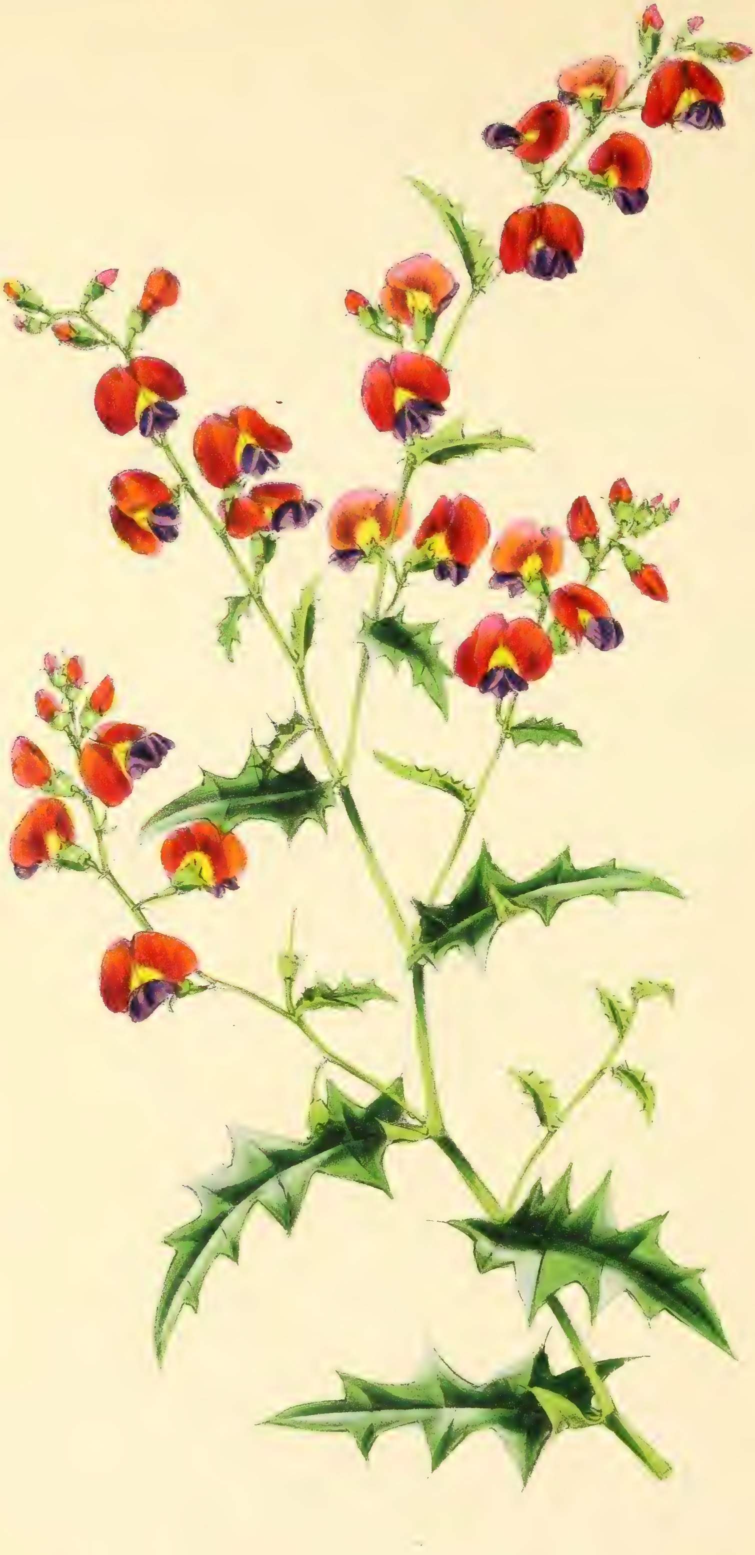
The preparation of plants for flowering next winter should now be thought of, by propagating *various for that purpose ;* among those best adapted, *Chrysanthemums* claim a first consideration : suckers and cuttings should be taken and struck ; *China Roses* of particular and good kinds, scarlet *Pelargoniums, Heliotropes,* &c. ; and when these have rooted, it should be borne in mind, they require especially treating for the purpose they are intended ; by growing them to good strong plants, and not permitting them to flower, till they are required to do so.

In the out-door department, the making good and dressing the verges of walks, turning the latter where required, and fresh gravelling, if necessary, should be attended to. The operation of turning walks should always be delayed as late in the season as can be done without interfering with their properly setting afterwards ; and this, that the moss and minute weeds that may be growing on their surface shall be the more effectually destroyed by the now-increased power of the sun's rays. Well rolling lawns is generally extensively practised at this season ; in addition to its being done now, we prefer the rolls always preceding the scythe : it not only improves the appearance of the lawn, but by aiding the operation of mowing is a saving of time.

Presuming that, as regards general pruning, training of climbers, &c., our previous directions have been complied with, we have nothing to add to instructions already given. Flower-beds should be got in readiness for immediate planting, and the kind of plants to occupy each determined, so that when they are planted no hindrance may be experienced.

Those directions of last month relating to the planting out of hardy herbaceous and *some* half-hardy plants, may be henceforth repeatedly carried out. The destroying of all weeds as they make their appearance, will be a saving of future labour, and, in addition to this, neatness and order should everywhere prevail.

In case of late frosts, *Tree Pœonies* and many specious plants will need protection, not more to prevent their flowers being destroyed than to preserve the plants themselves from severe injury.



S. Holden. del & Lith.

Chorozema triangulare

CHORÓZEMA TRIANGULARE.

(Triangular Chorozema.)

Class.	*Natural Order.*	*Order.*
DECANDRIA.	**LEGUMINÒSÆ.**	**MONOGYNIA.**

Generic Character.—*Calyx* nearly five-parted, two-lipped; upper lip bifid, lower one three-lobed. *Corolla* with a ventricose keel and short wings. *Style* short, hooked. *Stigma* oblique, obtuse. *Legume* ventricose, one-celled, many-seeded, sessile or sub-sessile.

Specific Character.—*Plant* a low, evergreen shrub. *Leaves* subhastate, pinnatifid, spinous, pointed; lobes entire. *Bracts* at the summit of the pedicels. *Flowers* small, showy.

The present species is one of the prettiest of its interesting family, and in the greenhouse, when in a healthy state, is always interesting; its singularly-angled bright-green leaves rendering it so even when not in flower. It is a native of New Holland, where it was discovered by Baxter. To this country it was introduced in 1830, but now even is somewhat scarce, which may arise in part from the delicacy of its nature, it being one of the more delicate of the genus.

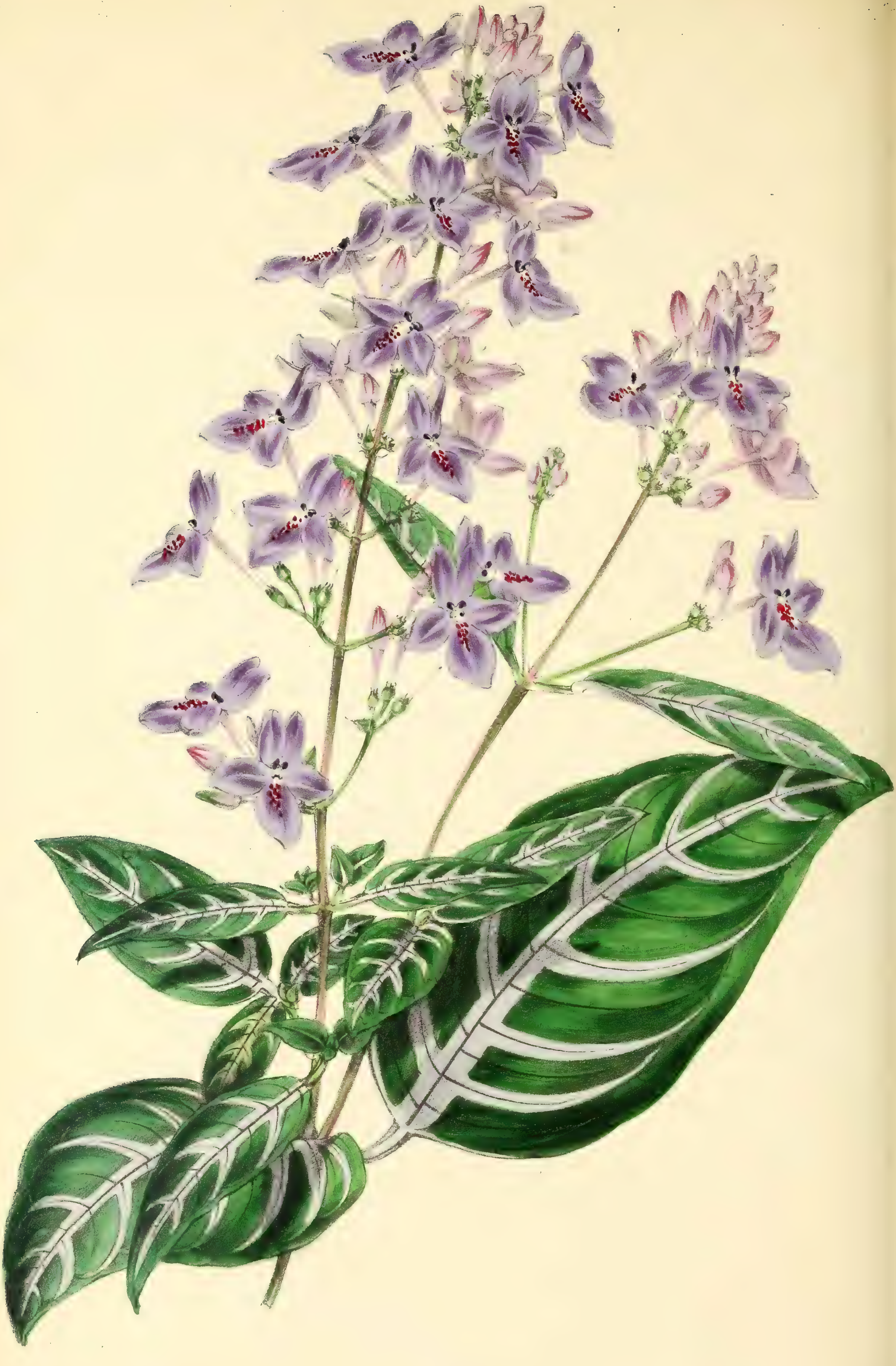
In habit it is naturally less straggling than some species of *Chorozema*, and by judicious managing can be rendered very compact: it is in an intermediate degree robust, well clothed with leaves, and bears in early spring, very freely, its short spikes of lively scarlet and purple flowers; and although, in common with the greater part of *Leguminosæ*, doing so at that period only in a greater degree than many others of them, it is from the cause already mentioned, throughout the whole year an object of interest.

As compared with some other delicate plants of the same natural order, and with closely allied genera, *Chorozemas* are not generally cultivated with that success their merits would render desirable. One of the principal causes of failure in managing them, in common with fine-rooted plants in general, is, we are persuaded, the injury their hair-like roots are too frequently exposed to from the pots in which the plants are growing being unguarded from the injurious effects of burning sun, and other drying influences, conjunctively with evils of which these are the fertile source, not less in magnitude, but which here would occupy too much space to detail.

C. triangulare, as before noticed, being delicate, some difficulty in cultivating it well (as may be expected) is experienced: when, however, well grown, it amply repays the care its proper management renders necessary. Selecting healthy plants, growing them in good sandy peat, securing good drainage, well elevating the ball of the plant in the centre of the pot, shading from glaring sun during the period of their growth, and in winter placing them where they will be secure from damp, is doing much towards favourable success. Cuttings with proper attention root with tolerable freedom.

Our drawing was prepared some time ago in the Exotic Nursery, Chelsea.

Labillardière gave the generic name from *Choros*, a dance; and *zema*, drink; commemorative of the joy he and his party experienced on finding a fresh-water spring when travelling on the West Coast of New Holland.



S. Holden, del. & Lith.

Eranthemum variabile.

ERÁNTHEMUM VARIÁBILE.

(Variable Eranthemum.)

Class.
DIANDRIA.

Order.
MONOGYNIA.

Natural Order.
ACANTHACEÆ.

Generic Character.—*Calyx* five-cleft, tubular, erect, skinny, persistent. *Corolla* monopetalous, funnel-shaped, tube slender, very long, limb five-parted, flat, lobes obovate and equal. *Stamens* two; filaments spiral at the base; anthers nearly ovate, compressed and protruding beyond the orifice. *Style* ovate. *Stigma* erect, unequal. *Ovarium* spatulate, compressed, two-valved. *Ovules* solitary, lentiform.

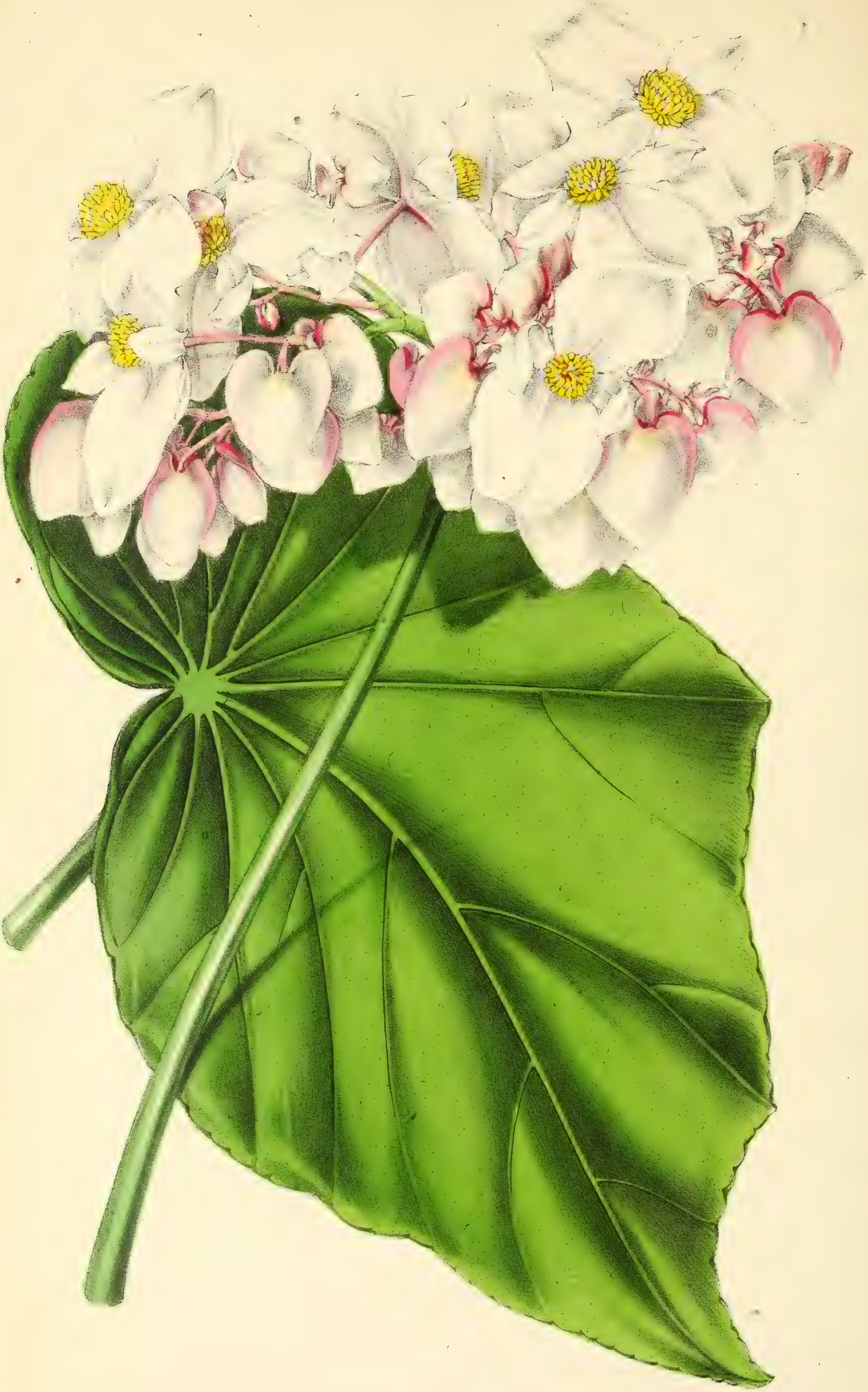
Specific Character.—*Plant* suffruticose, slender, pubescent. *Spikes* terminal, loose. *Peduncles* axillary, few-flowered. *Calyx* with subulate lobes. *Leaves* ovate or oblong, entire or slightly toothed.

It is recorded in botanical catalogues that this plant was first brought under notice in 1820; by whom, where grown, or to what extent it was then regarded, we are not able to learn. Till the present we are not conscious that a figure of it exists; and, being described in Brown's (Robert) "Prodromus Floræ Novæ Hollandiæ," it is little noticed in works on Botany.

Of its history, as it now exists in our gardens, further than that Messrs. Knight and Perry (who kindly furnished the subject of our drawing) received it recently from Kew, we have no intelligence. It is a very desirable plant, bearing all summer, in great profusion; its spikes of pretty light-purple flowers, which at their throat are slightly marked with rosy crimson. Quite small plants flower very freely; indeed, it is dwarf-growing, and well clothed with foliage, whose silvery marking always constitutes it a pleasing object.

Being a New Holland species, it may be imagined that a greenhouse temperature is all that it requires; and although it might there grow and flower with very fair success, there is no question but it would be in its true element in the stove, or at least in an intermediate house: grown in either of these last, and when flowering placing it in a warm greenhouse, would not be subjecting it to conditions unfavourable to its welfare, and would permit its bloom to be viewed with a degree of pleasure the stove, as is well known, would not admit of.

Notwithstanding it is a plant so pleasingly compact, and wearing such an engaging aspect when flowering, only requiring to be seen in that state by a lover of flowers, to be desired; as a large or tolerably sized specimen only, it probably will be considered really ornamental. The ease with which it can be induced to form such specimens prevents such a circumstance being prejudicial to its extensive culture. The freedom of its growth only requires that it be liberally treated to enable it to attain any dimensions. Cuttings root very easily. It should be grown in loam, leaf-mould, and peat.



S. Holden, del. & Lith.

Begonia lucida.

BEGÒNIA NÍTIDA.

(Shining-leaved Begonia.)

Class.
MONŒCIA.

Order.
POLYANDRIA.

Natural Order.
BEGONIÀCEÆ.

Generic Character.—*Male flowers.*—*Calyx* wanting. *Corolla* polypetalous; petals commonly four, unequal. *Female flowers.*—*Calyx* wanting. *Corolla* with from four to nine petals, generally unequal. *Styles* three, bifid. *Capsule* triquetrous, winged, three-celled, many-seeded.

Specific Character.—Plant, a tall shrub. *Leaves* oblique, ovate, acute, obsoletely crenated, shining. *Stipules* oblong, cuspidate, keeled. *Male flowers* with four petals; two roundish, two oblong, and smaller. *Female flowers* with five equal petals. *Capsule* with a large wing.

Synonymes.—*B. obliqua, B. purpurea, B. minor.*

It affords us much gratification to perceive that this family is in some degree engaging the attention it is worthy of; but we have not yet much cause to exult, so little is the worth of its members appreciated, compared with what it ought to be. No genus of plants, as a whole, deserves more extensively to be grown; distinguished as they are by so great a diversity of character, and real beauty, and flowering freely in the extreme: some species do so nearly always, and no portion of the year is unenlivened by the blossoms of some of them. And again, they are so easily cultivated; several kinds grow and flower very freely in the greenhouse, though all are benefited by a warmer temperature, and many necessarily require it.

"The Botanical Magazine" (from which our specific character is borrowed) informs us that *B. nitida* was received at Kew from Dr. W. Brown, in 1779: it is a native of Jamaica, and one of the best of the light-flowering species; grows freely and erect, becoming a large bush, and bearing panicles of pinkish-white flowers in profusion all summer: these contrasting with the rather large, oblique, shining leaves, have a fine effect.

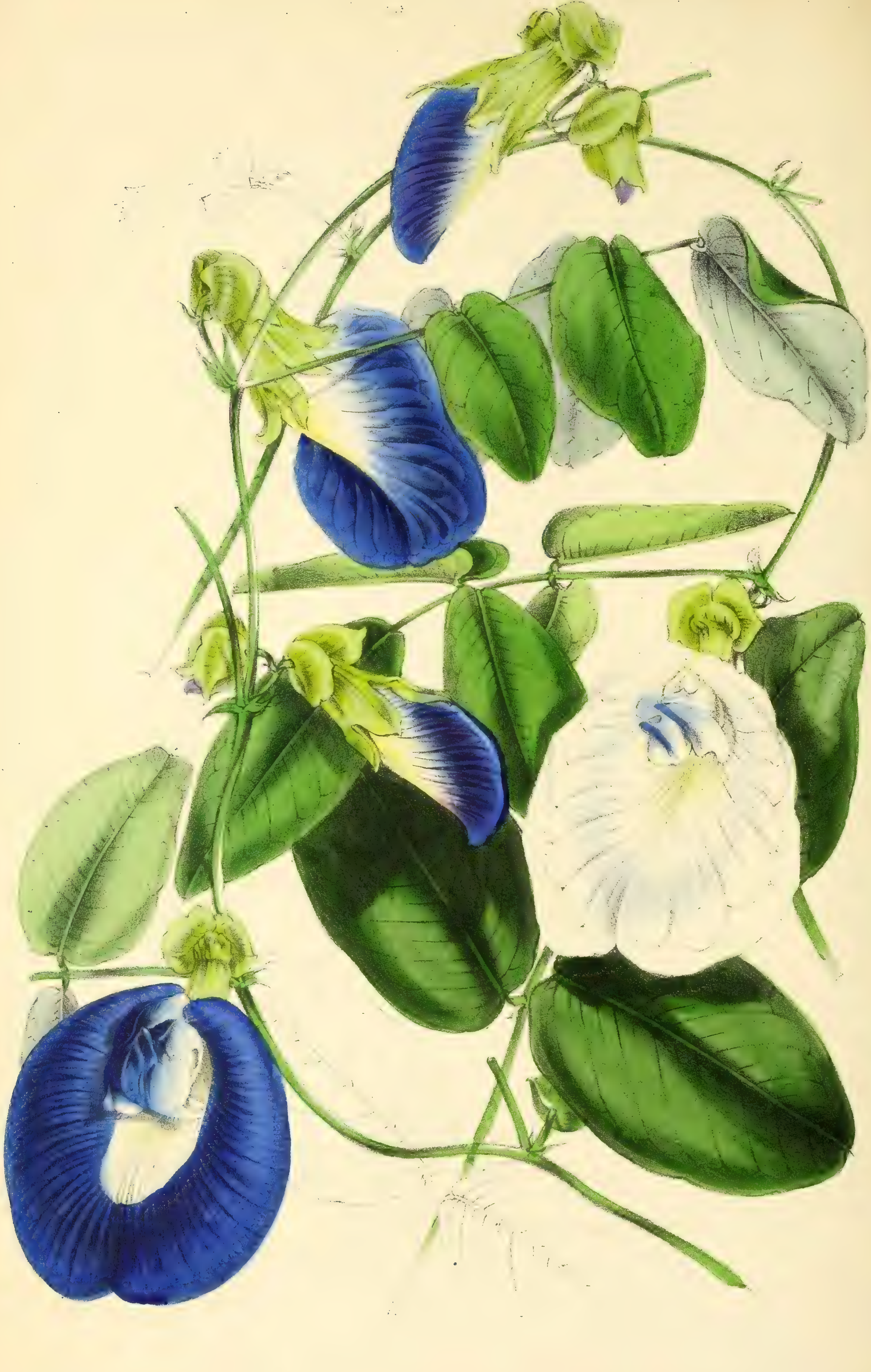
The ease with which *Begonias* flourish and produce bloom under any kind of treatment, though rendering them plants which all may cultivate with success, has led (in conjunction, probably, with the succulency of their nature preventing their being regarded in any other light than as objects of ornament) to their merits being lost sight of. No plants are more susceptible of improvement by good culture than the family of which the one under consideration is a member: a plant of *B. coccinea* which recently came under our observation, enjoying in a high degree the benefit of good management, could scarcely be equalled (viewing it ornamentally) by any plant, whatever its merits.

Having recently entered very largely into the management of *Begonias*, it would be superfluous to give particular instructions for growing *B. nitida*, especially as it is more easily managed than some, the warmth of the stove being given it.

The name engraved by our artist is one of the many by which this plant is known, but, as will be seen, is not the correct one.

Our obligations are due to the Messrs. Rollisson for the opportunity of taking our drawing.

Begonia is in honour of Michael Begon, a botanist of the seventeenth century.



S. Holden del & Lith.

Clitoria turnatea major.

CLITÒRIA TERNÀTEA MÀJOR.

(Greater Clitoria.)

Class.
DIADELPHIA.

Order.
DECANDRIA.

Natural Order.
LEGUMINÒSÆ.

Generic Character.—*Calyx* furnished with two arge bracts at the base, five-cleft. *Vexillum* large. *Stamens* diadelphous, inserted along with the petals above the base of the calyx. *Style* rather dilated at the apex. *Legume* linear, compressed, straight, two-valved, acuminated by the base of the style, one-celled, many-seeded. *Seeds* usually separated by cellular substance.—*Don's Gardening and Botany.*

Specific Character.—*Plant* sub-shrubby, evergreen. *Stems* twining, pubescent, branching at the axil of each leaf. *Leaves* with from two to four pairs of ovate mucronate leaflets, and a terminal odd one, nearly smooth, but sometimes having a few minute hairs. *Stipules* very small, awl-shaped. *Bracts* large, roundish. *Calyx* tubular, with five lanceolate segments, remaining in a dry state around the base of the seed-pod. *Flowers* of a considerable size, bright-blue. *Legumes* long, slightly downy.

Var. Major.—A plant raised from seeds, received from New South Wales, having large deep blue flowers.

Few gardens, we imagine, in which plants receive the commonest share of attention, will not at some period have possessed the singular and beautiful *Clitoria ternatea*, which is a native of India, and is figured in vol. vii. of this work. Our present subject is from Sydney, New South Wales, whence seeds of it were received by the lady of B. Harrison, Esq., a gentleman, neighbour to J. Cook, Esq., of Brooklands, Blackheath, Kent, and to whose successful gardener, Mr. W. P. Ayres, they were presented; and being raised, and flowering, proved to be a distinct and very superior variety, well deserving to be distinguished by the name now given it.

"The flowers," states Mr. Ayres, in a communication he has favoured us with respecting the plant, "are both larger and deeper in colour than *C. ternatea*, while the leaflets are more obtuse at the points, and are singularly marbled with yellowish-green, on a dark-green ground colour; it also flowers much more freely than any of the varieties of *C. ternatea* which I have cultivated. It will doubtless prove a very easily cultivated stove, or warm greenhouse climber, requiring to be sown in the early part of March in a brisk moist heat of 66° or 70°, and grown freely at about the same temperature. It requires plenty of moisture in the growing season, both at the roots and over the foliage, as it is subject to the attack of Red Spider.

"The Clitorias do not root freely from cuttings, but as they produce abundance of seed I do not take the trouble of keeping the old plants over the winter"

In saying, "The Clitorias do not root freely from cuttings," Mr. Ayres doubtless alludes to *C. ternatea*, its varieties, and the annual species in general, as we have not found such others as have come under our notice subject to the difficulty he mentions.

A soil consisting of loam, peat, and leaf-mould, so proportioned as to constitute it light, with good drainage secured to the pots in which the plants are grown, will be found very favourable to their welfare.

Clitoria is from *Clitoris*, an anatomical term ; to the subject of which the flowers are thought to bear some resemblance.

APPLICATION OF HEAT.

General Subject. At a period when a great stimulus is given to the higher and more elegant departments of horticulture, by the reduction of duties which had long lain as a dead weight upon its energies, it cannot be improper to take a retrospective view of the stages through which the processes of forcing and floriculture have passed from their rude commencements to their present state of comparative perfection.

It were curious to retrace the appliances adopted and described by that Prince of Gardeners, Philip Miller, in his celebrated work the "Gardener's Dictionary," published above a century ago, wherein we find the flues coursing backward and forward in the back walls of pine stoves, vineries, &c., &c. This mention of flues so situated leads to the consideration of that new scheme, now urged upon the public notice with a degree of pertinacity of which it appears very unworthy, under the title of the *Polmaise System.*

It is utterly repugnant to our object to decry anything or any experiment which may conduce to improvement; therefore, pending the arguments *pro* and *con* adduced by some who advocate or repudiate an arrangement which can in no degree affect the floral departments of the gardener, we now propose to take a passing glance of those methods of heating and applying bottom-heat which are manifest improvements upon the first inefficient flues in the back wall that have been above alluded to.

The ordinary smoke flue, which has undergone every possible modification in its courses and positions, is on two accounts manifestly defective, the only exception (if so it can be considered) being the one figured in No. 143 of this Magazine, at page 253. The first defect is inequality in the radiation of heat, by which the temperature of any house must vary in proportion. The second defect arises from altered conditions of the atmosphere, effected by the pervious nature of the brick channels through which the smoke and watery vapour, impregnated with sulphur and sulphurous acid, pass towards their final egress of the chimney. This defect cannot be perfectly remedied if even the steam of boiling water were thrown by a jet upon the burning fuel, so as to produce the entire combustion of the smoke; because, though the formation of sooty black smoke might be prevented, the sulphurous ammoniacal gases would still pass along the flue and chimney, and penetrating the bricks, become intermixed with the atmosphere of the building.

Here we call to mind the peculiar odour of a house heated by coals and coke, through the medium of smoke flues; it is dry and unrefreshing: the sensation created on the skin appeals to the understanding, and seems to demonstrate that a healthy condition of foliage is wholly incompatible with a heated dry-stove. Hence the necessity of steaming, of pouring water upon flues, and of deluging the floor therewith, all of which are very injurious to the gardener whose avocations confine him for hours in a large vinery or pine stove, saturated with water and vapour. Persons are in the habit of asserting that under certain circumstances "the air is *burnt:*" the expression is erroneous, though the effect produced would appear to sanction the fact. Thus, an "Arnott's stove" causes a disagreeable heat on the surface of the skin, rendering the face hot, while the feet become painfully cold! The theory is simply this: the iron of the stove, heated by internal fire, attracts oxygen from the air, and leaves a predominance of the deleterious azote or nitrogen, a gas perfectly unfitted for respiration, and which disturbs the vital pulmonary functions. Plants have systems of *breathing* and *transpiratory* pores; hence they sink under the influence of a dry poisoned atmosphere, and their vital functions become deranged. Watery vapour counteracts the effects of heated brick-surfaces, and of iron-cased stoves; but its agency is not complete; therefore we are called upon to search for melioration in the heating machinery of forcing-houses.

The first and most important change (for improvement it can scarcely be considered) was effected by the introduction of steam, of which a notable example was furnished by the late Mr. Loudon in his Encyclopædia of Gardening, edition of 1826, pp. 326—328, particularly at par. No. 1669. Reference is made to the garden, mansion, and farm-yard of Edward Gray, Esq., of Harringay-house, Hornsey, near London, "where ten large hothouses, and the largest of them 550 feet from the boiler, have been heated in a masterly manner by Messrs. Bailey."

A plan is given of the work in p. 327. The houses thus heated comprised two graperies, two pineries, a peach-house, a strawberry pit, plant-stove, grapery, greenhouse, conservatory, a mushroom-house, in all 50,000 cubic feet of air, and in addition, it supplied a steam apparatus in the farm-yard.

Among tradesmen and general gardeners, we believe that Messrs. Loddiges, of Hackney, were the first to adopt heating by steam in the large way; but it was found there, and in every other situation, that, although the heat distributed by steam is nearly equal and certain, and, as Loudon observed, so regular as "never to heat the tubes, even close to the boiler, above 212 degrees, it will heat them to the same degree, or nearly so, at the distance of 1,000, 2,000, or an indefinite number of feet." Yet it cannot act at all unless the water which furnishes the steam be always kept actively boiling. This, then, was found the chief vice of the system, and thus, by accident, a whole range of buildings might be brought into danger by the sudden privation of its heating medium. Steam, therefore, failed, and was succeeded by the introduction of hot water: but to whom are we to ascribe that great improvement?

Mr. Knight, the "President," did not appear to adopt it, because by one of his manuscripts it was made evident that he remained perfectly satisfied with "a well-built and well-placed smoke flue, composed of the best materials." However, we read, at par. No. 1670 of the "Encyclopædia of Gardening," (1826,) just cited, that "*Pipes of hot water* were proposed to be circulated through hothouses by Knight." (*Hort.*

Trans., vol. iii.) The plan, it is also stated, was tried many years ago by the late Mr. Gould, gardener to Prince Potemkin, in the immense conservatory of the Tauridian Palace, of Petersburgh. It was adopted to a certain extent by Davis, a sugar-boiler, in Essex; but it does not appear likely to become general.

As now, in the instance of the Polmaise projects, arguments were then adduced on both sides, and opinions ran in opposite directions. Strange to say, the same Mr. Loudon received a communication, and thus published it in vol. iii. of his "Gardener's Magazine" of 1828, page 186, No. 23. The article was headed, "An Account of a Plan of heating Stoves by means of Hot Water, employed in the Garden of Anthony Baker, Esq., F.H.S., by Mr. Whale, gardener to Mr. Bacon."

There is an accompanying figure, which proves that a boiler was placed in a recess in the centre of the back wall of a house, 40 feet long, whence two pipes, three and a half inches diameter, passed from the boiler, and two others, of the same bore, re-entered it at a place nearer the bottom of that vessel. Mr. Bacon had, in 1822, put this mode of heating in practice, on a small scale, at his seat at Abernean, in Glamorganshire; and Mr. Atkinson, the architect, had, at his residence at Grove-end, constructed a model of a similar apparatus—without, at the time, having any communication with Mr. Baker—with which he tried the experiments successfully.

Thus we have reason to believe that the year 1822 may be viewed as the era of the hot-water system. The boiler appears to have been a square vessel, 2½ feet long, 1½ wide, and 1 foot 8 inches deep, heated by a fire at the bottom.

Since that period, various improvements have suggested themselves; boilers of different shapes, and differently situated in respect to the heating fuel, have become articles of commerce; are eulogised and puffed off, or complained of and disqualified, according to circumstances; and in many cases gutters or channels of cemented tiles, or of wood, have been substituted for pipes. Equability of heat, economy of fuel and of labour have been the general objects of all parties, and herein little remains to be added to the simple facts detailed by Mr. Whale, who, after pointing out the defects of the brick flue and steam-pipes, adds, "The heating with hot water has none of the objections belonging to flues and to steam. The apparatus is simple, and not liable to get out of order. The boiler has only a loose wooden cover, and no safety-valves are required. The fuel consumed is very moderate, and when once the water is heated for it, retains its heat for many hours after the fire has gone out."

Thus the principles of this fine system of heating were established and worked out above 24 years ago, and all our subsequent improvements consist in giving intensity to the current by confinement and pressure, aided by position, so as to command the utmost equability attainable by means of any fluid which parts with some of its heat during every moment, and through every foot of its course. By the assistance of sliders in tanks and water-channels, or of valves in iron tubes, steam also is at command; and with appliances for the diffusion of bottom or atmospheric heat, and a moist vapour to almost any required extent, what more can be required? To perfect our machinery—to economise in every way consistent with liberality,—are acts of prudence; but we cannot consent to "unknow all our knowledge," for a mere assertion, and to vote a system vicious which has effected wonders in every branch of high cultivation.

Whatever may result ultimately from fresh adaptations of, and ingenious additions to machinery, certain it is that the Arnott or Polmaise stove, or other modification of a central fire with a wet blanket, will never furnish bottom-heat, or be applicable to the greenhouse. They refer to the vinery; but as that structure does not enter into the plan of our work, we refrain from saying any more on a subject which is irrelevant to our design; nevertheless, the above remarks were needed, to caution readers who might misapply facts adduced in other periodicals.

ON GROWING IPOMÆA RUBRO-CÆRULEA, AND PHARBITIS LEARII, IN THE OPEN AIR.

Notwithstanding, in treating of the above plants, we run the risk of going over ground previously traversed, we have not the slightest hesitation in directing attention to any plan, the adoption of which will enable such truly resplendent subjects to be more universally grown, and their beauties to gratify more extensively those who can appreciate their worth.

In floricultural, as in all pursuits which minister to the gratification or necessities of man, what constitutes the objects of those pursuits engages his attention, or occupies his time and talents, only so far as they are esteemed really valuable. Next to a plant being known to be highly ornamental, the criterion of its value is the extent to which it can be rendered popularly so. A very slight practical acquaintance with plants, and the circumstances which contribute to their being cultivated, will suffice to convince that one of any kind, whatever its merits, engrosses regard in proportion to the extent those merits are widely understood and appreciated, or the reverse, under an opposite state of things. Our position in a peculiar manner brings us in contact with circumstances which enable us to understand this fact in its fullest extent.

The two plants under consideration are associated together in the present notice, more because the treatment we are desirous to see applied to them is equally advantageous to both, than from their general similarity to each other, either as to the management they experience, or their botanical resemblance. *Ipomæa rubro-cærulea*, as being more directly pleasing in general aspect, more truly gorgeous when flowering well, we will first advert to, by taking a review of the manner in which it is usually grown. As an annual, it is raised in early spring, and every encouragement to free growth afforded it; how exultingly to appearance it appreciates its advantages by inconceivably rapid and vigorous growth, those having any acquaintance with its management will bear us testimony: kept growing in pots, it soon becomes unmanageable, as far as desirable training, by confining it to any description of trellis, to induce it to form a pleasing specimen, &c., is concerned, and attains to such dimensions as render its further management as a pot-plant, impracticable. If it is plunged in the pot in which it may be growing, or planted out in the greenhouse or stove, a continuation of equally exuberant growth will still distinguish it, and under such circumstances a very considerable space, possessing the advantage of being quite open, and enjoying unobstructed light, is quite necessary, if it is to be allowed to develop its natural character. With such advantages, a splendid effect, in late autumn, when the natural luxuriance of its growth is checked by the decreased amount of light, is often created for a considerable period, by the splendour and number of its blossoms. By a modification of the last-mentioned course of treatment, or a combination of the advantages of the two methods alluded to, we have succeeded in flowering it in a very superior and remarkable manner. Some seed sown early last spring, quickly formed strong healthy plants; at first they were liberally potted, and being favoured with a temperature and atmosphere very congenial to vegetation, they grew with astonishing luxuriance; eventually, however, (through the summer) they were nominally disregarded. In autumn they were placed, still growing in the same pots, (which for the size of the plants were small, and which had become filled with roots,) in a house where a very agreeable dryish temperature was maintained, and which enjoyed peculiar advantages in being very light, catching almost every ray of sun: for convenience the pots were elevated over the hot-water pipes, the plants having their tops directed and slightly attached to a trellis-work at the back of the house; with the aid of an occasional watering of liquid manure, they grew rapidly, and presently flowered in a most profuse manner, creating an effect during the time the flowers remained expanded, difficult to convey an idea of by description. But under neither of the methods of treatment detailed can the plants enjoy an extended cultivation.

The principle upon which success was attained in flowering *I. rubro-cærulea,* in the instance just considered, consisted in the plants having been suitably situated to indulge their natural exuberance of growth, and then being subjected to such conditions as were favourable to the production of flowers.

Pharbitis Learii, universally known as *Ipomæa Learii,* is much more favourably regarded than *I. rubro-cærulea;* and deservedly so, as being essentially more valuable, from its being a perennial, growing and bearing its clusters of flowers (when they are at all produced) with much greater freedom. Almost without exception, it is grown in the stove and then planted out; and we cannot deny but that in numerous instances very distinguished success results from the treatment it there experiences. But in an economical point of view, and not less regarding it as occupying such an extent of space, thereby monopolising that room which could be much more pleasingly devoted to other climbers to give variety, &c., it is maintained there at a considerable sacrifice. Planted out frequently where it has no restrictions as regards room for its roots, it grows excessively free, often covering the whole roof of a house, and sometimes, under these circumstances, flowering very satisfactorily; when it does so, though, it constitutes the exception, not the rule. The almost invariable consequence of it, and most similar free-growing plants, enjoying an unlimited extent of root-room is, that nothing is attained beyond unbounded luxuriance of growth, scarcely qualified with even the production of a solitary blossom. Except in instances where it is thus permitted to grow for a purpose of usefulness, as the shading of a propagating-house, &c., or for the creation of an unusually remarkable effect, it cannot be so extravagantly accommodated.

In the greenhouse it would be likely to experience those conditions that are more in accordance with its natural requirements; but there even, generally speaking, it is difficult to afford it that room, to provide for the development of its true character, and to favour it with the amount of light in conjunction with other requisites, necessary to insure a reasonable chance of its becoming the enchanting object the application of art, (developing its innate worth,) can constitute it.

Viewing the several difficulties we have enumerated, as attending too universally the culture of *Pharbitis Learii*, and *Ipomœa rubro-cœrulea*, abstractedly, the conclusion well-nigh arrived at is, that as plants, to be extensively cultivated, much less universally grown, they must be lost sight of. If no other ways of growing them were successful when practised, than those we have alluded to as success being attained under, such a conclusion would be just; but we have great pleasure in directing attention to growing them in a manner that will afford the highest satisfaction, in as far as it is dependent upon a most profuse display of flowers conjointly with exuberant and really healthy growth. It is simply planting them to grow in the open air; and as there, the plants which so strongly arrested our attention were flourishing in a manner all that could be desired, we will describe the circumstances under which they were doing so, in preference to explaining the principles upon which that success was so pre-eminent. A solitary plant of *Pharbitis Learii*, of considerable size, and proportionately strong, was planted about the end of May, at the base of a low, rough wall, with a full south aspect; the wall was previously furnished with wires, for the purpose of supporting climbing and other plants which might be attached to them. The natural soil of the situation was poor sandy loam, of a light-brown colour, to which only, by way of preparation for the roots of the plant, less than a fourth of leaf-mould was added; establishing itself in the soil so prepared, it began to grow exceedingly free, flowering in the most gratifying and satisfactory manner imaginable. *I. rubro-cœrulea*, under exactly similar circumstances, did equally well. Some plants of the last species were pretty freely potted in suitable soil, and plunged in their pots in the same situation with those planted out, and were much benefited by being so treated; and there is little doubt but that attention to preparing a soil for *I. rubro-cœrulea*, under such circumstances, would always be followed by similar benefit, its being altogether more delicate, its roots especially, than *P. Learii*. The actual cause of the plants being plunged in pots was, to enable them to be taken up in the autumn and removed under shelter, that they might perfect any seeds not come to maturity, at the sign of approaching frosts. The plants so operated upon were of rather small dimensions, and full of vigour; they were taken off the wall with considerable facility, and being fastened to suitable trellises, not only when placed in a warm temperature ripened their seeds as it was desired they should, but bloomed for an unexpected length of time. Older plants of *I. rubro-cærulea*, planted in the open ground, ripened abundance of seed in the situation in which they grew.

The knowledge the facts above detailed put us in possession of, is that *Pharbitis Learii*, and *Ipomæa rubro-cærulea*, are certain to succeed, at least on a conservative wall, and *not there only*, but on any wall or fence enjoying a south or southern aspect. Some preparation of the soil in which they are to grow will be necessary. It is requisite that it be rather light, not too rich, and the situation, if not naturally dry, should be rendered so by draining, &c. Numerous other stove and greenhouse climbers suggest themselves as being equally certain to succeed, under similar circumstances; among them the lovely *Pharbitis tyrianthina*, a species flourishing and flowering beautifully in the greenhouse, although usually regarded as requiring a stove; *Convolvulus pentanthus*, charming in the extreme when flowering in any position, but enchanting if planted where it can grow and flower in a natural manner; and a great number of other fine plants, too numerous to mention here. To some of them we may recur at a future opportunity.

Many dwelling-houses, with a garden adjoining, possess an aspect in which the foregoing plants would thrive admirably. Any such, with their walls already occupied with climbing *Roses*, *Clematis*, &c., present no obstacle to such plants being grown against them, as they would, proper provision being made for their roots, without doubt, grow and flower in a very pleasing manner, and attaching themselves to the more robust living supports, produce a very natural effect.

The practice of growing *Ipomæa rubro-cærulea* in pots, and plunging them in a suitable situation in the open air, till they become fructiferous, and then removing them under the shelter of glass, to display their bloom, suggests the idea of dealing with many climbers similarly, some of which may be difficult to flower; which difficulty by such means might be overcome. We recommend this suggestion to the attention of our readers, none of whom, we feel convinced, will consider we have gone too much into detail, or devoted too much space to our present paper, treating, as it does, of plants almost unequalled for the splendour of their flowers.

SUITABLENESS OF SOME KINDS OF DAHLIAS FOR FORMING DWARF MASSES.

It is not our intention in the present paper to assume that any improvement in the method of growing *Dahlias*, as they are generally cultivated, can be attained; except, it may be, in some points of minor importance. Planted as they usually are, in extensive masses in suitable situations; in isolated groups; or in single and double lines; and as individual specimens; simply secured to an upright support, a proper space for the development to the full of their beauties, and the individual merits of each; being agreeably trained, they constitute as separate individuals, or collective masses, a beautiful and noble object.

Any varieties taken indiscriminately, whatever are their merits as perfect formed flowers, or as being of a desirable colour, will not be suitable for our purpose; nor can we specify any particular variety as appropriate, by giving its name, when there is such an endless number of names, and some of which are applied to flowers wholly opposite as regards their merits and colour. And, again, exactly similar kinds bear in different places wholly different names. One of ancient favour, at the time of its popularity being held in great estimation, bore the name of *Rancul&aelig;flora* very generally, under which name, for growing in dwarf masses, it is now in some places extensively cultivated. *Globularia multiflora* is a name it was also known by. It is of small dimensions, growing from three to four feet high, short jointed, and bears a large proportion of foliage, which is of a medium size and much serrated. The flowers are self-coloured, brightish crimson, rather small, of very fair form, and borne on shortish peduncles, in immense profusion. In this last particular merit consists its great excellence for the purpose under consideration. The variety in question is thus described in detail, as it possibly possesses most of those properties which render a variety especially suitable for the object we have in view. Any of a similar character, of whatever colour, would be proportionately useful; those of decided colours, bright and distinct, being most valuable. Among the numerous striped kinds and variegated varieties in general, numerous very appropriate, without doubt, could be found; and if even few suitable at present exist, a very limited period need elapse before almost any number of varieties of the required habit could be raised, proper parents, to commence with, being chosen; for it is well known *Dahlias* increase in variety when raised from seed, to as great an extent as they can be increased in numbers by propagation.

The most suitable kinds being selected, in raising the plants attention should be directed with a view to prevent their being highly stimulated, or luxuriance of disposition created, it being unfavourable to a satisfactory production of bloom. The soil to grow them in should be somewhat selected, any description would tend to defeat a favourable result; that free, rather light, and perhaps slightly poor, should be chosen. In planting, the plants should be placed so as nearly to lie flat on the surface of the soil, and secured with a hooked peg. After-management consists in pegging down, as they continue to grow, the leading and main lateral shoots, leaving the remainder to rise and flower unsecured, excepting in case of their extending so much upwards as to break the uniform appearance of the mass; few shoots require more than once fastening, and those about to flower should not be brought wholly to the ground by the pegs; care must be taken that in bringing any down, they are not broken off or injured. The surest preventive of injury from this last cause, is to go over the plants regularly, fastening the shoots down while they are young. Some branches will require cutting away to prevent their being too thick, and the plants crowding upon each other; the foliage too will occasionally want thinning for the same reasons, and to permit the whole plant to enjoy light and air. Managed in accordance with the foregoing directions,—the main point, choosing of proper kinds, being regarded,—a splendid mass of bloom, finely contrasting with dark-green stems and foliage, the whole rising from a foot to two feet high, produces, in appropriate situations, a very fine and unusual effect.

The circumstances under which Dahlias so grown can be introduced into gardens, exists to a greater extent than might be supposed. In extensive grounds, clumps of them employed would be instrumental in introducing a feature very acceptable, as being unusual. Masses planted on banks, or a rising situation in the distance, would be unique, and create an effect wholly unattainable by other flowers. Also in less extensive pleasure-grounds, a group centrally situated, could sometimes be admitted to advantage; and even in the rural garden of the cottage, such as are of small dimensions. These dwarf Dahlias, although not trained in the manner we describe, could be admitted where those of larger growth could not, the latter growing too tall, thereby being inappropriate from not according with the general features of the garden.

It will be understood that those Dahlias of a dwarf and peculiarly infloresent habit only, are properly suitable for the purpose we have drawn attention to; and also why the tall-growing kinds, whatever are their merits, are not so. But as we are practically acquainted with their unsuitableness, we will notice one or two of the principal causes of their being so. In the first place, they do not bear flowers sufficiently free, and those which are borne when the plants are trained and pegged close to the ground are hidden by the branches, owing to their long-jointedness; the peduncles of the flowers are also, under such circumstances, greatly elongated, consequently are incapable of supporting the flowers under heavy rain, or against rough wind. In arranging the branches too, when pegging them down, it is difficult to render them, from their great length, a compact and close mass; in short, they will not at all bear comparison with the description we have directed attention to, which, under judicious management, will well recompense, by the fineness of their appearance in an appropriate situation, the extra labour and attention their management, when thus grown, may require.

THE NEAPOLITAN VIOLET.

The great esteem in which this *Violet* is universally held, is attested by the extent to which it is grown for the purpose of producing flowers in early spring. In our former volumes we have freely given practical instructions for its cultivation; but, as it has recently come under our observation flourishing and producing flowers in a remarkably fine manner, and with a success seldom experienced, we will give such account of that success as will put our readers in possession of a knowledge of the principles upon which it was attained.

The principal instance in question was that of a common garden-frame filled with plants in the usual manner, by being planted in rows: the foliage was in a remarkable degree healthy and robust, and the flowers, both as to the numbers in which they were produced, their doubleness, but more especially their size, were such, as those who in imagination measure them by such as are commonly met with, cannot conceive. In appearance, to the general observer, the plants under consideration were not flourishing from any peculiar causes or enjoying particular advantages. The only circumstance respecting them which forced itself upon the attention was their general healthiness, consisting in the deep green of their foliage, their perfect freeness from insects, &c. The soil in which they were growing was apparently of no particular description; it seemed to be a light-textured, fibrous, light-brown loam, with a portion of leaf-mould added. The frame was of the ordinary description, the lights being of wood; it was merely raised by a course or two of bricks above the surface of the ground, situated so as to enjoy a south aspect. The plants were planted also on the surface of the ground, and were not more than a few inches higher than the surrounding surface outside the frame; they were consequently, at the back of the frame, as much as from two and a half to three feet from the glass, and at the front from twelve to fifteen inches. We are thus minute in describing these particulars, because the point to which we wish to draw particular attention is the *degree of shade* afforded the plants by their position in the middle of January, and that January of a very mild and rather gloomy description. In conjunction with the plants being quite healthy when they were planted, and in other respects being in such a condition as would have been conducive to their welfare under any circumstances, we have no doubt the shade they enjoyed was mainly instrumental in causing so fine a development of flowers. In another instance, an occurrence accidentally came under our notice that exactly supports the view we have taken:—a frame filled with the *Neapolitan Violet*, so elevated as to permit the application of bottom-heat, (by linings of hot manure, &c.,) at pleasure, the plants being planted nearly close to the glass, were in the month of February showing flower. At this period the severity of the weather rendered it necessary they should be well-protected; they were accordingly covered with garden-mats; a fall of snow presently succeeding, with a continuation of severe weather, the covering was allowed to remain over them several days; eventually, however, they were uncovered, and to our great surprise were bearing a number of fine healthy flowers. The degree of warmth afforded by linings at the time, was such as to be just perceptible. The plants were not by any means so healthy as in the first instance, where success was so extraordinary, but nevertheless produced fine flowers during the time they were in comparative darkness.

Viewing the conclusion the facts adduced in the foregoing paragraph lead to scientifically, so far as science teaches that success in the cultivation of any plants is proportionately great or otherwise, as we succeed in subjecting them to similar conditions to those nature affords, or depart from doing so, there is nothing irrelevant to the known principles upon which plants are treated under cultivation. In the case of the *Violet,* we scarcely need allude to the extent to which its flowers enjoy shade, as they are naturally produced: every one knows that in endeavouring to pluck a handful of those gems from their lowly retreat, we have often to dislodge a mass of *Nettles,* or other rude herbage, or thrust ourselves to the bottom of a thorny hedge, or as often to plunge among the ranker vegetation of a shady wood, if we would possess the little modest flower; and, as if not sufficiently shaded and hid from view under these circumstances, it is still further shielded by the leaves of the plant which bears it. There is nothing in the habit of the *Neapolitan Violet* to indicate that it would not, under cultivation, equally enjoy as great a degree of shade and exclusion as the species of our native woods; the circumstances under which it has flourished in so gratifying a manner, go to prove that it would.

The general culture of the *Neapolitan Violet* is so simple, that in addition to what we have previously given respecting its management, we have little to notice. We cannot, however, omit impressing upon those propagating it, that they should endeavour to raise really healthy plants, keeping them free from that pest, the Red Spider, rather than luxuriant gross-growing ones. Usually at the time it is wished to have flowers, the plants are not only placed where they can receive all the light possible, but also are subjected to a higher temperature than is congenial to their nature, and which, we are satisfied, is very unfavourable to the production of flowers. In the instance described, where flowers so fine and in such numbers were produced, no artificial heat was applied, nor any means of protection, further than was necessary to screen the plants from frost.

With these brief suggestions, and the facts adduced, we will leave our readers to be guided by their own discretion as to how far, or in what way they act upon them.

FLORICULTURAL NOTICES.

NEW OR BEAUTIFUL PLANTS FIGURED IN THE LEADING BOTANICAL PERIODICALS FOR APRIL.

Aristolo'chia giga'ntea. Sir W. Hooker, writing of this species, says :—" It is in reality a very striking and handsome flower, and rendered more worthy of cultivation in consequence of the absence of the horrid stench which will prevent the much larger blossoms of *A. gigas*, Lindl., from ever becoming favourite inmates of our stoves." It is a climber, with rather large, cordate, acute leaves, and flowers composed of a perianth very large, nine to ten inches long, if the curvature of the limb is taken into consideration. The tube is cream-white tinged with green ; the lower (pendent) half is oblong, inflated, obscurely veined, three-angled at the back, and having two pairs of oval depressions or glands at the base ; the tube thence becomes contracted, bent like a syphon, then enlarging and becoming excessively inflated on one (the anterior) side ; again it becomes contracted, and at once expands into the ample, singularly concave, almost conchiform limb, reticulated with veins, prominent on the outside, where it is cream-coloured, mottled with pale purple ; within, it is white, or nearly so, but the veins are purple, and the areolæ sprinkled with purple ; the margin is waved, and is split down at the anterior edge ; the apex is tipped with an apiculus or short tail scarcely an inch long. Within, towards the mouth of the tube, the colour is much deeper, and of a more uniform purple." *Bot. Mag.*, 4221.

Ario'psis pelta'ta. " An extremely curious new genus of *Aroideæ*, discovered by our friend J. S. Law, Esq., in the neighbourhood of his residence, Tanna, district of Bombay, and of which tubers were kindly sent by him to the Royal Gardens, where they flowered in August, 1845. It is one of the best marked and smallest of any genus of the Natural Order, and reminds one more of the growth of a *Cyclamen* than of an *Aroideous* plant. *Ramusatia vivipara* of Dr. Wright, Sir W. J. Hooker considers a synonyme." *Bot. Mag.*, 4222.

Aphela'ndra aurantia'ca. " Handsome as is the well-known *Aphelandra cristata*, the present species far exceeds it in the size and rich orange-colour of the spikes, and it possesses another advantage, in the flowers appearing upon small handsome-looking plants. We regret that we cannot add to the little information given by Dr. Lindley, respecting the history of this plant. Nothing certain is known of the country. It was presented by Mr. Henderson, of Pineapple-place, to the Royal Gardens of Kew, where it flowered in the stove in the autumn of 1845, and where it made a very striking appearance." *Bot. Mag.*, 4224.

Ano'na palu'stris. A plant introduced to our gardens by Ph. Miller, in 1731, from the West Indies. It was long cultivated at Kew, but never flowered there. It was first flowered by Mrs. Sherbourne, of Hurst House, Prescott (a most successful cultivator of tropical fruits), in June, 1843, in the stove ; and the fruit represented ripened in August, 1845. The chief value of the fruit consists in its beauty and rich fragrance, not being edible ; indeed by some it is said to be poisonous. It forms " a tree, six to fifteen feet in height, with ever-green, elliptic-ovate, very acute, glabrous leaves, or rather short petioles. Peduncles lateral, but not axillary, solitary, single-flowered. Calyx greenish-yellow, each with a red blotch within, deeper in the inner petals. Stamens and pistils numerous, crowded. Fruit ovato-rotundate, yellowish-brown when ripe, deep orange within, formed of a congeries of closely compact acini." Synonymes, *A. glabra*, *A. aquatica*, *A. uliginosa*. *Bot. Mag.*, 4226.

Bouva'rdia longiflo'ra. " *Bouvardia* is a Mexican genus of *Rubiaceous* plants, named by Mr. Salisbury in compliment to Dr. Charles Bouvard, who was formerly superintendent of the Jardin du Roi at Paris. In most of the species the flowers are small ; here they are large, pure, white, and exhaling a delicious Jessamine-like fragrance, whence it becomes a most desirable stove plant. We know not if any garden possesses this charming Bouvardia, save that of the Earl of Derby, to whom I am indebted for the specimen here figured, and who received it from Ifzabol. It inhabits also Santa Anista, according to Humboldt, where it is called *Flor de San Juan*, and the vicinity of Queretaro and Huanajuato. My Herbarium possesses also native specimens from Mr. Skinner, gathered in Guatemala. In habit and form of corolla, this is closely allied to *Hindsia* ;

but the seeds, according to Cavanilles' figure, are those of *Coffeaceæ*, not of *Cinchonaceæ*." It is a branching shrub, with ovate, acuminate, entire leaves, bearing its flowers terminally, sometimes two or three together, at other times the upper part of the branch is trichotomously divided into a corymb of several, ten to twelve, large, snowy, very fragrant blossoms. Synonymes, *Aginetia longiflora*. *Bot. Mag.*, 4223.

Era'nthemum albiflo`rum. "We are so accustomed," writes Sir W. Hooker, "to the bright blue of the flowers of an *Eranthemum*, that it is not easy at first sight to persuade oneself that the present plant is of that genus, with its long almost virgate racemes of snow-white flowers : yet a nearer inspection will show that it has all the essential characters of it. The fertile stamens, it is true, are not exserted ; but neither are they in *E. montanum*, an acknowledged species of *Eranthemum*. It was raised from seed from Bahia, by Messrs. Lucombe, Pince, and Co., of Exeter, and by them kindly sent for the pages of this Magazine in November, 1845. Its foliage is large and handsome, dark-green, and its long spikes or racemes of pure white blossoms render the plant a pretty, though not a gaily-coloured object. It is cultivated in the stove." *Bot. Mag.*, 4225.

Indigo'fera deco`ra. Mr. Fortune found this species cultivated in the nursery gardens at Shanghai, from whence he forwarded it to the Horticultural Society ; it is thought probable it may prove hardy. In the Journal of the Horticultural Society it is thus described :—"A dark-green handsome bush, with somewhat glaucous branches. The leaves are pinnate in form, two to five pairs and an odd one, quite smooth on the upper side, but slightly covered on the under side with very fine hairs ; attached by their middle ; the leaflets are exactly ovate, with a short bristle at their end, between one and a half and two inches long, of a very dark-green colour ; and to each pair there are two short bristle-like stipules. The flowers grow from the axils of the leaves in horizontal racemes much shorter than the leaves themselves ; they are a light rose-colour, and very handsome." It is a very free-growing greenhouse plant, flourishing in almost any kind of soil, and requiring an abundant supply of water in summer. *Bot. Reg.*, 22.

Plumba`go zeyla'nica. Except that it is inferior, and has white flowers instead of blue, this species is similar to the well-known *P. capensis*. Dr. Lindley, writing of it says :—"There are few species indeed which have a more extensive geographical range than this. Dr. Royle states that it occurs in the plains of India as far as 30° north latitude ; we have it now before us from Madras, Burma, Ceylon, and Timor ; and Dr. Brown found it as far to the southward as Port Jackson in New Holland. In none of the instances that have come under our observation, is there any difference of the least moment in the forms which the plant assumes in so many different climates." *Bot. Reg.*, 22.

Sarcochi`lus calceo`lus. "This very singular species is a native of Manilla, whence Mr. Cumming sent it to Messrs. Loddiges, of whose Catalogue it is 1554. The lengthened stem is at variance with the usual habit of *Sarcochilus*, as also is the lip, so far as the very large size of its middle lobe is concerned. But no other distinctions appear to exist. The resemblance of the lip to a slipper is too obvious to require being pointed out ; it is, however, but a false resemblance after all, for it has no hole for the foot, being solid and spongy, and in reality closed up by a pair of little ciliated warts." *Bot. Reg.*, 19.

Sile`ne scha'fta. The Journal of the Horticultural Society states :—"This proves to be a beautiful little herbaceous plant, producing a great number of spreading slender downy stems, which form compact tufts, and are terminated near the extremity by four or five bright purple flowers more than an inch long. Of these flowers, that at the extremity of the shoot opens first, and those below it one after the other in succession, so that the branches are, by degrees, covered all over with blossoms. Its stems do not rise above six inches high, and render it well suited for bedding out, or for cultivating among collections of alpines, or for rock-work, over which it will bend gracefully." A perennial, hardy, producing seeds freely ; was received by the Horticultural Society from Dr. Fischer, who obtained it from the Botanic Garden at Dorpat, and it has also found its way hither through France. *Bot. Reg.*, 20.

Schube'rtia graveo`lens. This plant has already been noticed by us as *Physianthus auricomus : Schubertia auricoma* is also a synonyme. Dr. Lindley's figure was taken in the Nursery of Mr. Glendening of Turnham Green, who says :—"When *Stephanotis floribunda* made its appearance it was generally considered, and justly, the finest twining plant in cultivation. The present subject is not inferior to it under good culture. The flowers are rather larger, and quite as fragrant; they are likewise produced in great profusion. The plant which was exhibited by me before the Horticultural Society last autumn, and awarded a Banksian medal, remained in bloom quite four months; thus rendering it a most useful and desirable plant at a season peculiarly distinguished by paucity of flower." *Bot. Reg.*, 21.

Trichosa'nthes colubri'na. Dr. Lindley writes:—"We believe that the sole possessor of this curious plant is Sir John Hay Williams, Bart., of Bodelwyddan, near St. Asaph. In growth the species resembles a cucumber, with leaves ten or twelve inches across, and varying in form from heart-shaped to three or five-lobed. The flowers are white, and beautifully cut into delicate threads, whence the botanical name *Trichosanthes*, which Sir James Smith translated *Hairblossom*. The fruits, which hang down from the rafters to which the vines of the plant are trained, resemble serpents, are six feet long, and when unripe, are singularly striped with green and white, which changes to a brilliant orange." *Bot. Reg.*, 18.

NEW OR INTERESTING PLANTS RECENTLY FLOWERED OR DESERVING OF NOTICE, IN THE PRINCIPAL METROPOLITAN NURSERIES AND GARDENS.

Au'cuba japo'nica, *var*. Every one knows the beautiful variegated *Aucuba japonica*. Mr. Low of Clapton has plants of a striking variety of this old favourite (imported, we believe); its foliage is thrice the size of that generally borne by the common species, and has a broad band of whitish-gold variegation down the middle; towards the margins they are of the usual colour. If it should continue to be distinguished by the novel marking above alluded to, it will make a beautiful shrub for the flower garden; we are doubtful it will not; indeed, we observed in one instance, it was simply producing the leaf of the common *Aucuba;* possibly, grown in a dry gravelly situation, it might preserve its distinct features.

Bego'nia ——. In one of the stoves of the nursery of the before-named gentleman, a very pretty species of this genus is flowering. It is from India, is one of the less strong-growing shrubby kinds, erect-growing, and having rather small, oblique, oval leaves, which are finely toothed, and their petioles, as well as the stems of the plant, reddish-blush colour. The flowers are borne profusely at the axils of the leaves, in small panicles, resembling those of *B. nitida*, but are smaller, and more of a blush colour.

Cinera'ria, *vars*. Among an immense number of seedling *Cinerarias* in the Nursery of the Messrs. Henderson of the Wellington Road, in fine bloom, the following were exhibited at the Horticultural Society's Rooms, and received a certificate of merit:—*Royal purple*, *Royal crimson*, *Isabella*, and *Beauty of St. John's Wood*. The two first are fine colours, as indicated by their names; *Isabella* is lilac and white; and *Beauty of St. John's Wood* crimson and white. They are not novelties either as regards their colour, or the shape of their blossoms; but are highly meritorious as bearing broad expansive heads of bloom, and luxuriant foliage; indeed nearly the whole of the seedlings are distinguished by similar features.

Dysophy'lla stella'ta. Observing small plants of this pretty plant in flower at Kew the other day, we were reminded of beautiful specimens exhibited in the beginning of December at the Horticultural Society's Rooms, in Regent Street, by Moore, gardener to the Earl of Auckland. It a good deal resembles a *Bedstraw* as regards the disposal of its leaves and flowers; the former are linear, produced in whorls at short distances apart along the stem, which is surmounted by a long spike of deep violet flowers. The plant is an annual, a native of India, inhabiting swamps, therefore requires heat and abundance of moisture to enable it to grow well. The plants in question were very fine specimens, and viewing them as flowering in winter, in conjunction with their colour, it is a plant of considerable importance.

Fu'chsia ——. To the Horticultural Society, at a meeting in Regent Street on the 7th ult., the Messrs. Veitch sent a new member of this genus, a native of Peru. In general character it a good deal resembles *Fuchsia fulgens* as to habit, but it has no corolla; its beauty therefore consists in its calyx, which is very long, and those on the principal plant exhibited, were a pale rose-colour; a specimen bearing flowers of a darker hue was present; the flowers are produced freely at the base of the young shoots. The foliage pretty, somewhat heart-shaped; and altogether it is a very beautiful, and most distinct species.

Habrotha'mnus fascicula'tus. Although we have previously noticed this fine plant, we cannot refrain from doing so in the present instance. A specimen flowering in the large conservatory at the Horticultural Society's Garden at Chiswick, is a truly splendid object. In general appearance, when not flowering, it is not unlike a small plant of *Brugmansia suaveolens*, the foliage is similar in shape, but of course not nearly so large, and much less smooth. The flowers are borne in immense large leafy panicles, some of them eighteen inches and upwards in length, and in great profusion; they are tubular, waxy in appearance, of a deep orange-crimson. The plant has been little regarded in consequence of the treatment it has experienced being unfavourable to the developement of its true character. In conjunction with this last cause of the plant having been slighted, *Cestrum roseum* has been extensively distributed for it. It is in reality a fine thing, excellently adapted for a conservative wall, and the borders of a greenhouse conservatory.

OPERATIONS FOR MAY.

In the average of seasons, and almost universally, the principal work of this month consists in furnishing the flower-garden and pleasure-ground generally, with plants for a summer display of flowers. In some instances, according to circumstances, such as a particular locality being frequently visited by late spring frosts, a late autumn display of flowers being required, the beds being occupied with spring-flowering plants, or their being of unusually small dimensions, &c., it may be advisable and necessary to postpone till as late as the middle of June even, placing the plants out. It should be borne in mind that the plants preserved to plant out thus late, will require particular attention to maintaining them healthily, and induce them to become good and established plants; freely potting and plunging them when potted, pinching off the whole of their flowers before they come to maturity, &c., will be instrumental in insuring their welfare till they are required.

Except in cases similar to those already mentioned, the various beds should not now require preparing for the reception of the plants. Presuming they do not, but that in accordance with previous instructions their being got properly ready has been attended to, we will direct attention to the actual operation of putting the plants in the ground. As it is generally performed, a circumstance frequently the fertile parent of very considerable mischief is the neglect of ascertaining whether the balls of the plants being turned out are *properly* moist; their not being so, in scores of instances, is the cause of the plant dying off, and invariably the certainty of many dragging on a lingering existence for a considerable time. The great number of plants every spring turned into the open ground, are in a peculiar manner previously liable, from various causes, to become dry; principally from the majority of them having been long kept in small pots, consequently the balls of earth they are growing in, from frequent waterings, are rendered firm, and the soil often bound solidly by masses of roots. The least degree of dryness under these circumstances once becoming established, it will be imagined that, rather than its being lessened by the quantity of water casually given to the plants, a state of perfect drought will inevitably succeed. Again, these numerous plants in small pots, exposed as they too frequently are to the full glare of sun, and in addition, the quantity of roots powerfully and continuously extracting the moisture from the soil they grow in, renders a few hours of the description of exposure referred to, sufficient to completely dry them to parching, to which condition, if they arrive, nothing short of the immersion of the whole ball of earth, for some time in water, will restore it to a proper degree of moistness. To small plants, like those under consideration, a state of perfect saturation is necessary to the healthy preservation of their roots, during the prevalence of hot and clear weather.

From whatever cause the balls of plants about to be placed in the ground are dry, or becoming so, that dryness, to whatever extent it exists, must be removed by soaking the whole ball of earth in water; for, if planted without undergoing such operation, they are certain to have their state of dryness increased, and watering to any extent, or scarcely a lengthened period of rain, will render them otherwise. The ball being directly sheltered by the plant, and the looseness of the surrounding soil affording a ready medium for the escape of any quantity of water naturally descending upon it, or artificially applied, accounts for such being the case. In addition to well soaking every plant before depositing in the ground, it is an excellent plan to saturate the whole after they are placed there, and previous to the surface soil being finally arranged, which, when disposed of, should be made to cover the part watered. Such a method is more effectual than watering an unlimited number of times in the ordinary way.

The aptness of plants to become dry at this period of the year, and the same injurious consequences ensuing, is equally likely to be exhibited under every variety of circumstance; more especially *small* newly-shifted ones; these latter, in common with those of larger dimensions, having recently undergone a similar operation. Large specimens of *Oranges*, *Rhododendrons*, *Altingias*, &c., growing in tubs, or the borders of the conservatory, climbers planted in the last, or other erections, and even numerous specimens of more valuable things, growing in the open air, in sheltered situations, will be immensely benefited by being occasionally completely drenched with water. In short, during the present and ensuing month, too much attention cannot be bestowed upon those plants we have instanced, in seeing they do not suffer from lack of moisture. An occasional watering with liquid manure, administering it according to the nature of the plant, will give a very serviceable stimulus, at a season when a vigorous growth is much to be desired. The cautious culturist will easily distinguish in the case of those plants we have directed attention to, which requires water to the extent we have stated, and which it would be injurious to administer it to; the proper examination is the surest preventive of injury from this source.

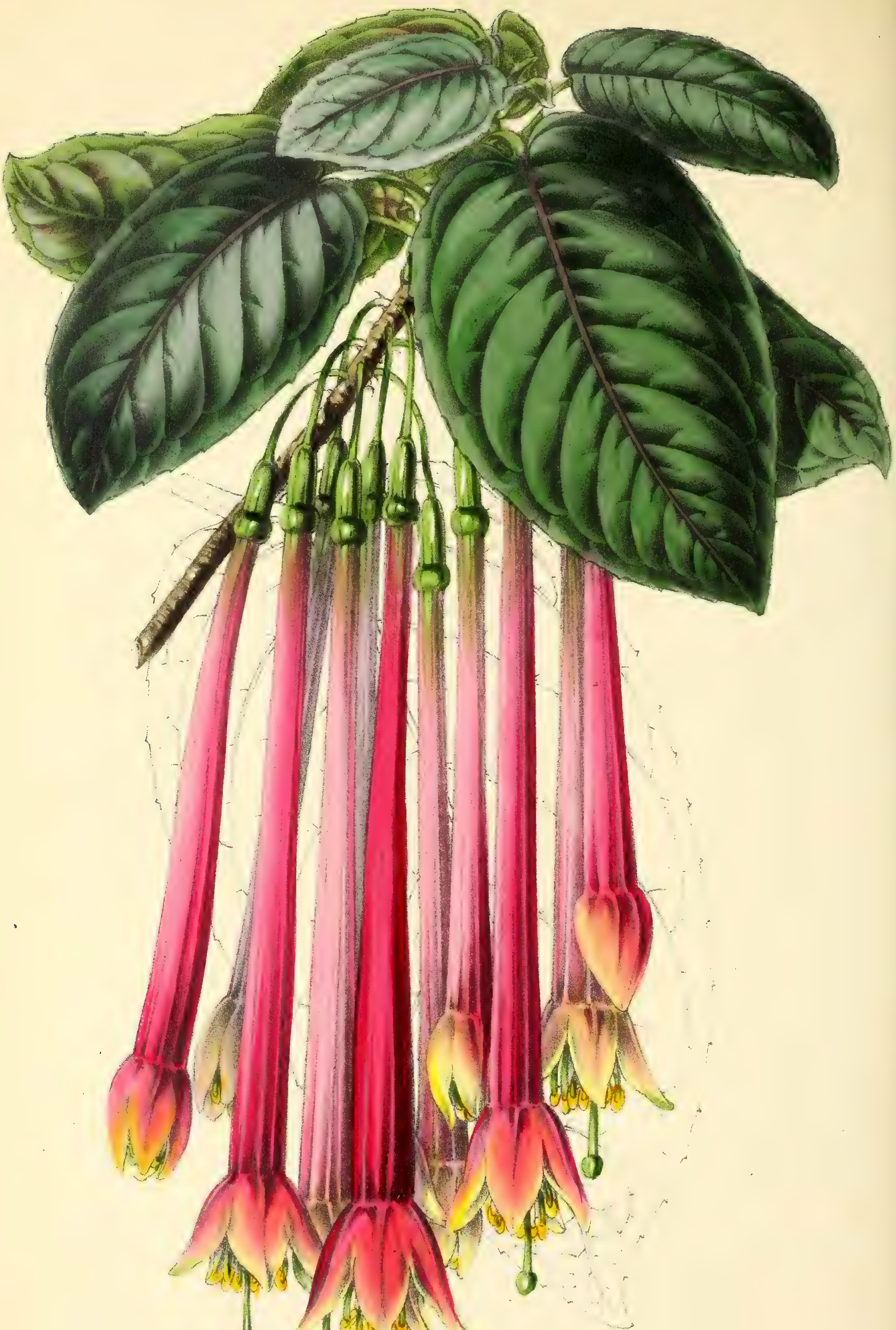
Beyond the work in the floral department of the open air we have already noticed, nothing but the most ordinary operations require attention. We scarcely need allude to such as the proper training of climbers, as their growth requires it; much may be done by early attending to them, thinning out their shoots, and laying them in, so as to have a mass of flower over the whole plant, thereby hiding in a very agreeable manner the old and bare stems, &c. Many plants in the open borders will require staking, training agreeably to their habits, removing some of their flower stems, &c., so as to secure to those remaining the energy of the whole plant, to produce a fine bloom.

The attention required by cultivated plants in general, consists in such a course of treatment being applied to them as secures the healthy acting of the conditions they are subjected to; to notice in detail the more prominent points requiring to be particularly regarded, such as the admission of air to the structures in which they are growing, the regulation of temperature according to the degree required by the plants, and especially the application of water in a proper manner, &c.

Any plants necessarily delayed being potted, through being in flower, &c., with those specimens requiring reshifting, must be treated with that care the advanced period of the season renders necessary. Greenhouse plants as they go out of flower will bear severely cutting back, pruning them to any required shape: a continuation of disbudding those growing, arranging the branches, and training the young wood, while it is easily acted upon, is necessary. The proper regulation of climbers should be unremittingly pursued.

The directions in our last Calendar respecting *Orchideous* plants, must still be applied, and, in addition, much vigilance in shading is required. Some cultivators do not approve of shading being practised to any extent in the treatment of this wayward family of plants. Experience has long since convinced us of its beneficial effects, not only when applied to *Orchideæ*, but to all cultivated in glass erections. It is directly serviceable in screening from injury the young growth of New Holland and greenhouse plants; also the inmates of the stove; and not the young growth of plants only, but also the leaves of many. *Camellias* are in an extreme degree susceptible of injury from the full glare of the sun upon their foliage. A further way in which it is highly useful is, by its enabling the inflorescence of plants to continue, after it is expanded, a much longer time than when fully exposed to light; independently of the very gratifying manner in which it allows all flowers and plants to be viewed, compared to what they can be without its aid.

The numerous tender annuals, for flowering in pots, or intended for a late display in the flower garden, can now be admirably brought forward, and accommodated in the pits lately occupied by half-hardy, and tender perennial plants, &c.



Holden del & lith.

Fuchsia machrantha.

FÚCHSIA MACRÁNTHA.

(Large-flowered Fuchsia.)

Class.
OCTANDRIA.

Order.
MONOGYNIA.

Natural Order.
ONAGRÀCEÆ.

GENERIC CHARACTER.—*Calyx*, tube adhering to the ovarium at the base, and drawn out at the apex into a cylindrical four-cleft tube, whose lobes soon fall off. *Petals* four, alternating with the lobes of the calyx, and inserted in the upper part of the tube; very rarely wanting. *Stamens* eight. *Ovarium* crowned by an urceolate gland. *Style* filiform, crowned by a capitate stigma. *Berry* oblong, or ovate-globose, four-valved, four-celled, many-seeded.

SPECIFIC CHARACTER.—*Plant* a dwarf evergreen shrub. *Leaves* ovate, acute, alternate, entire, smooth, dark-green above, purple beneath, large; young leaves tinged with purple above; *petiole* short. *Flowers* in partial clusters, peduncled, drooping, longer than the leaves. *Calyx*, tube slender, tapering to the base, very long, pale rosy crimson; segments spreading, oblong, pale rose, tipt with green. *Corolla* wanting. *Stamens* unequal. *Style* protruding much beyond the stamens. *Stigma* globular. *Fruit* oblong.

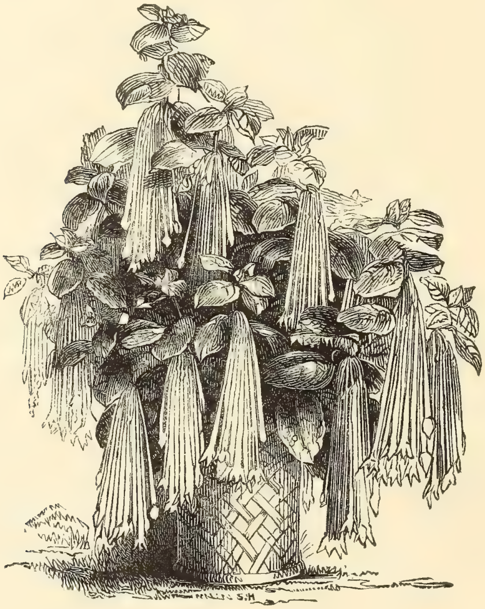
THIS is the plant noticed at page 94 of our last number; the Messrs. Veitch inform us Sir W. Hooker has given it the above name. It is a native of Peru, where it was found by Mr. W. Lobb, 300 miles from Lima, and by him sent to the Messrs. Veitch's establishment at Exeter. We have previously stated where, in a flowering state, it was first brought into notice. From the plant we allude to, its owners kindly favoured us with a specimen, the subject of the drawing from which our plates have been prepared.

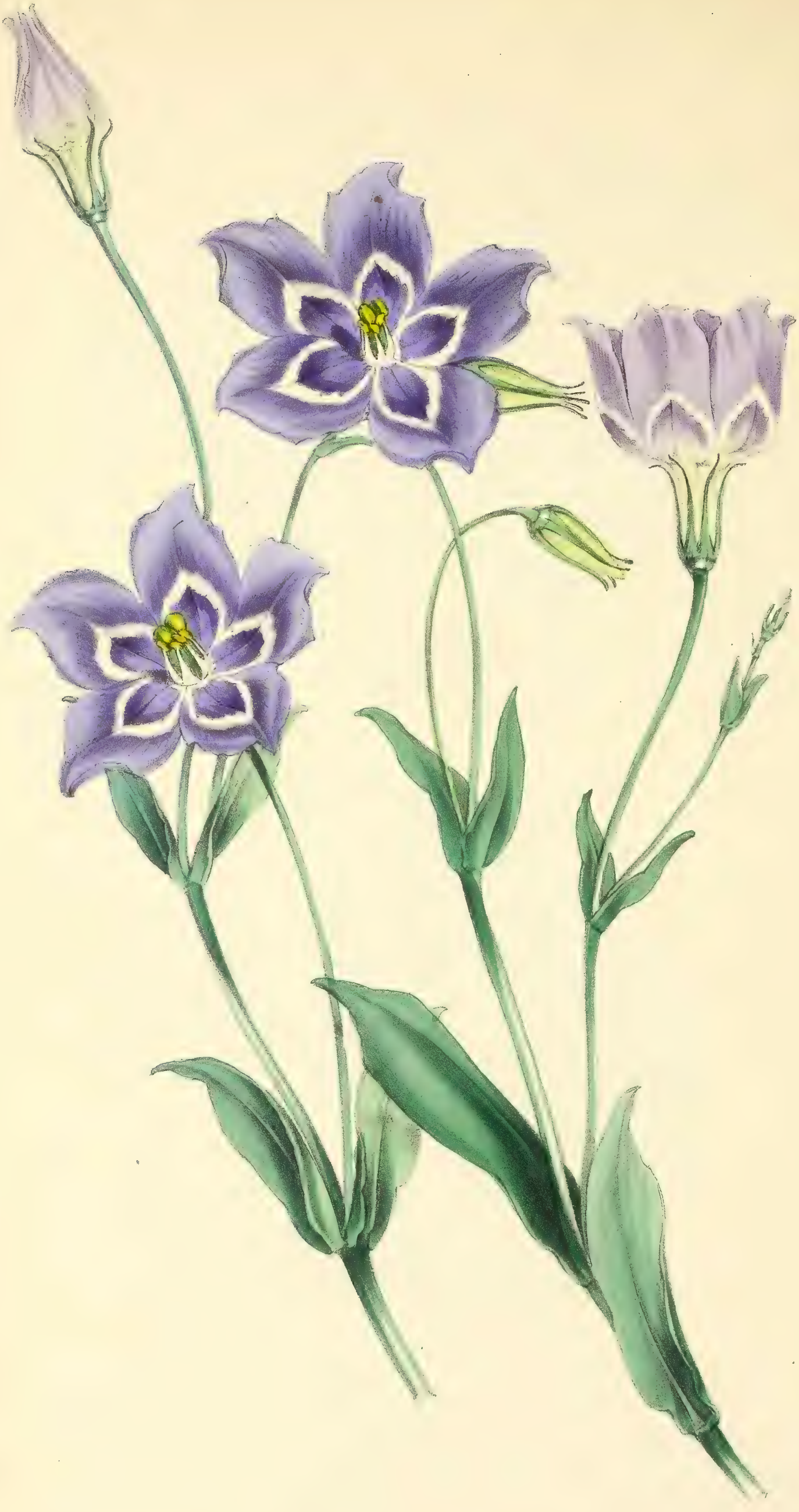
The great excellence of this species, apart from its own worth as an ornamental plant, consists in its complete distinctness from others. This feature is the more conspicuous, from the great number of hybrid varieties now existing, and continually accumulating. So numerous are they, that our *Fuchsia* taste is quite surfeited, and yet we quarrel not with the number of varieties, but with the sickening extent to which they are distinguished by names, when there is so little to justify its being done. *F. macrantha* has, of course, family features; it is most like *F. fulgens*, being dwarf, and similar in habit, but it differs from that species in its very fine dark-green foliage, and the gay colour and immense length of its flower-tubes. In this latter respect it comes near to *F. corymbiflora*, but the form of inflorescence in the two species is quite different, and completely so the colour of their flowers. The true hue of those of *F. macrantha*, we are informed, was not discovered by the plant exhibited at Regent Street, nor their size, for the Messrs. Veitch acquaint us they have had flowers more than six inches in length. The plant in question bloomed at a season very unfavourable to the high colouring of its flowers; there is, therefore, no doubt but that, under favourable circumstances, the flowers will be of a colour that will render it a more engaging species than it even then gave promise of being.

The Messrs. Veitch are singularly fortunate in introducing to the country such popular and ornamental plants as these *Fuchsias*, the present species, and *F. serratifolia*, the fine *Siphocampylus coccineus*, &c. Doubtless it affords them as much gratification as their good luck must deserve encouragement.

We scarcely need allude to the chance of some really distinct varieties being raised by hybridising with this species, for the probability is, that by this time twelvemonths, we shall be informed, by advertisement, of the existence of some "Superb new *Fuchsia*, cross between *F. macrantha* and——————," &c., &c.

It will propagate with as great facility, and doubtless flourish under similar treatment to that usually applied to other *Fuchsias*. Its fitness for training in the standard form will be at once understood. Our woodcut represents its natural character. We understand the Messrs. Veitch purpose letting it out early this month.





S. Holden, delt & Lith.

Eustoma exaltata.

EÚSTOMA EXALTÁTUM.

(Tall Eustoma.)

Class.
PENTANDRIA.

Order.
MONOGYNIA.

Natural Order.
GENTIANÀCEÆ.

Generic Character.—*Calyx* deeply five-cleft, having the backs of the segments more or less winged. *Corolla* with a funnel-shaped tube, which is contracted a little at the apex; and a deeply five-cleft limb, which is longer than the tube, and is variegated below the middle above. *Stamens* five, inserted near the middle of the tube, and a little longer than it; filaments erect, linear-lanceolate; anthers rather sagittate. *Ovarium* oblong, one-celled, succulent; with short, stipitate placentas. *Style* short, erect; stigma large, deeply two-lobed. Seeds scrobiculate.

Specific Character.—*Plant* annual. *Stems* terete; *leaves* obovate-lanceolate. *Calyx* segments winged on the back.—*Don's Gardening and Botany.*

Synonymes.—*Eustoma exaltata, E. silenifolium, Lisianthus exaltatus, L. glaucifolius, Chlora exaltata, Urananthus glaucifolius.*

This is a deserving companion of the beautiful *Eustoma Russellianum*, better known as *Lisianthus Russellianum.* It is unlike that species in its whole parts being smaller, and resembles it in being wholly of the same glaucous hue, grows erect, as it does, and produces its flowers in the same manner; but they, in addition to being smaller, have a whitish blotch at the base of their petals. Various names have been given it by different botanists; some account of them may be found at page 70 of our last volume. The present is accorded it by Dr. Lindley, as the one it justly ought to bear.

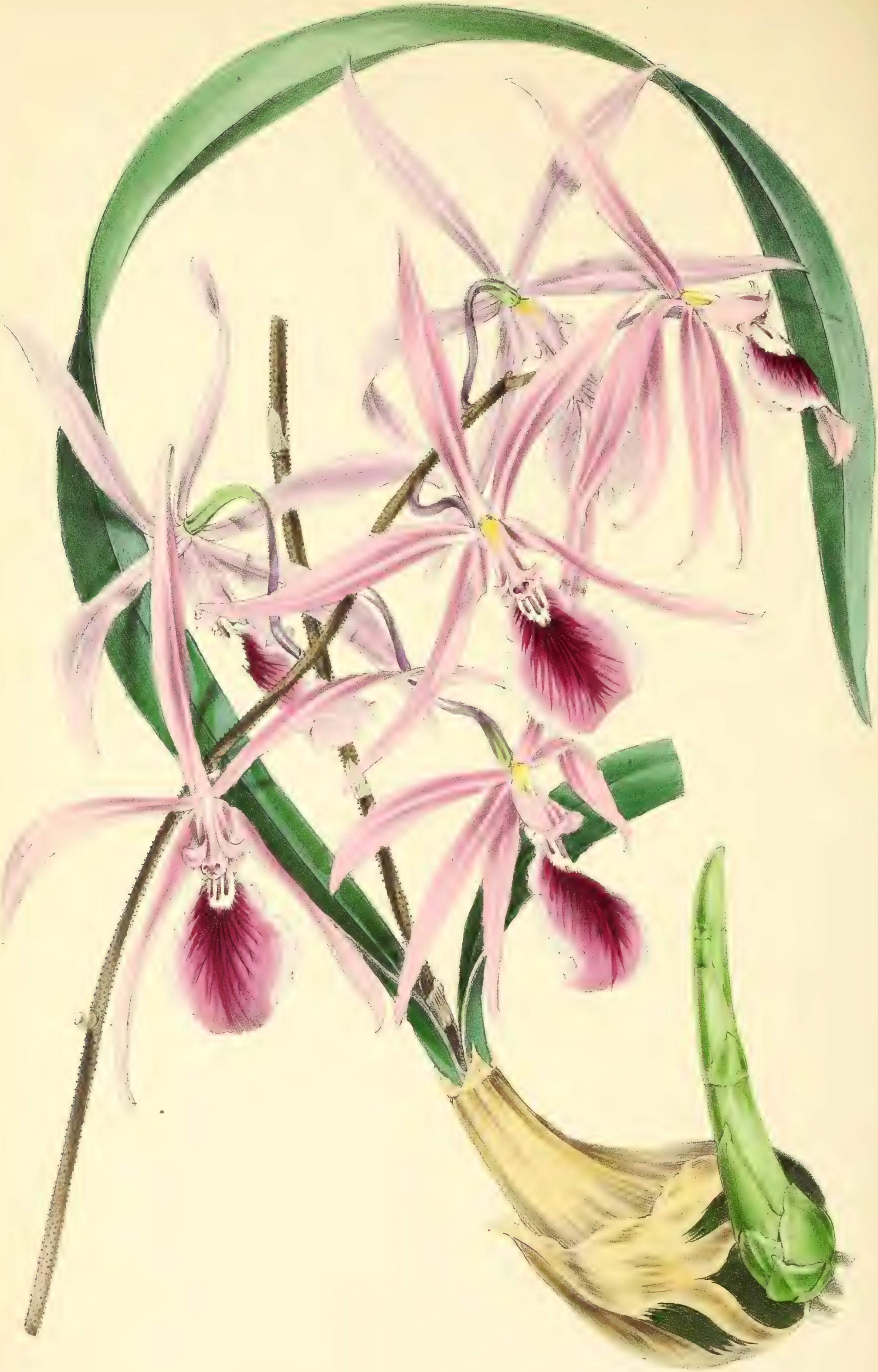
The same species, or slightly differing varieties, have a very wide botanical range in North America, numerous stations in which continent are recorded where such have been found. Near half a century has elapsed since it was first known, but as an object of culture it has only recently attracted attention.

Beautiful and well-known as is *E. Russellianum*, its splendour is seldom developed by cultivation. Neither have we yet seen our present subject, its kindred species, occupying that position it is entitled to as an ornamental plant. The great mistake in their treatment arises from regarding them as annuals: though they may be so, naturally, no good is achieved by cultivating them as such. They properly should be considered biennials, and their seeds carefully sown in gentle warmth, in late summer or autumn; and when up, ought to be potted before they become the least drawn, and, if possible, kept steadily growing till they flower. Previous to their doing so, however, considerable skill is required to keep them healthy, and induce them to become large, and, by repeatedly stopping their shoots, bushy plants; which, when they have grown to, and flowering freely, are truly ornamental objects.

A close, warm pit, or stove, is most suitable for growing them; their flowers are also more finely developed in such structures, but a warm greenhouse is sufficient for them to expand their blossoms in. Both species are most apt to suffer from drought; care, therefore, should be taken, that sufficient moisture is ever supplied to them. Propagation is best effected by seeds. *E. exaltatum* will increase by cuttings, though at the expense of the energy of the plants so raised. Light loam and sandy peat form a suitable soil.

Our drawing was prepared, a considerable time since, from flowering plants in the collection at the Exotic Nursery, Chelsea.

Eustoma is Greek for beautiful mouth, in allusion to the beauty of the corolla in the members of this genus.



S. Holden. del & Lith.

Epidendrum verrucosum.

EPIDÉNDRUM VERRUCÒSUM.

(Warted Epidendrum.)

Class.
GYNANDRIA.

Order.
MONANDRIA.

Natural Order.
ORCHIDÀCEÆ.

Generic Character.—*Calyx* wanting. *Corolla* with five oblong spreading petals. *Labellum* without a horn at the base, tubular, embracing the column, with a broad, erect plate. *Column* terete, placed below the germen, gibbous. *Anthers* concave. *Capsule* oblong, three-sided, one-celled, three-valved. *Seeds* numerous, extremely minute, roundish.

Specific Character.—*Pseudo-bulbs* ovate. *Leaves* sword-shaped, obtuse. *Scape* with the pedicels and ovaries warted. *Racemes* nodding. *Sepals and petals* linear-lanceolate, acuminate. *Labellum* three-lobed; lateral lobes subfalcate, acute; middle one oval, crenulated, with two ridges at the base. *Column* with two wings, truncate.

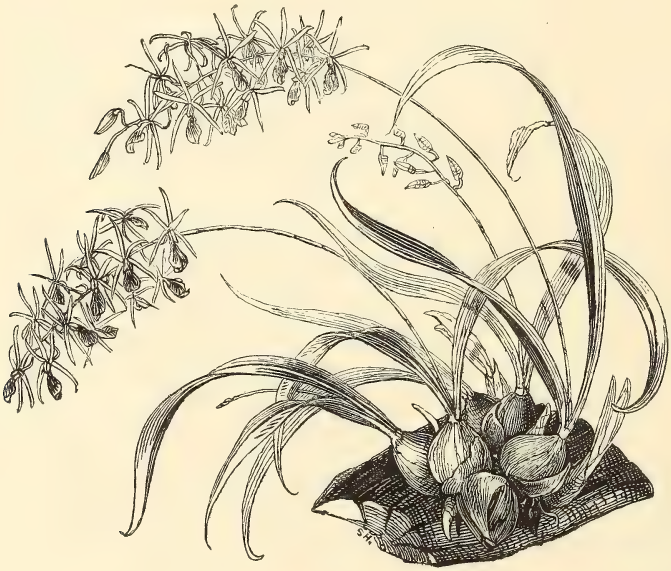
Orchid growers, who have an extended acquaintance with the family, do not require to be told how extensive a genus *Epidendrum* is; but many of our readers may not be aware that it comprehends more species than any other in *Orchidaceæ*. Upwards of one hundred and forty are enumerated in the most recently-published catalogues; and they do not contain all known, new species being continually discovered. Many are not more interesting than our native weeds, others are curious only; such, and the former, are valuable in a botanical point of view alone. On the other hand, numerous species are highly valuable, both from their scarceness and as being amongst the most beautiful of the tribe. Our pages bear satisfactory testimony to this fact.

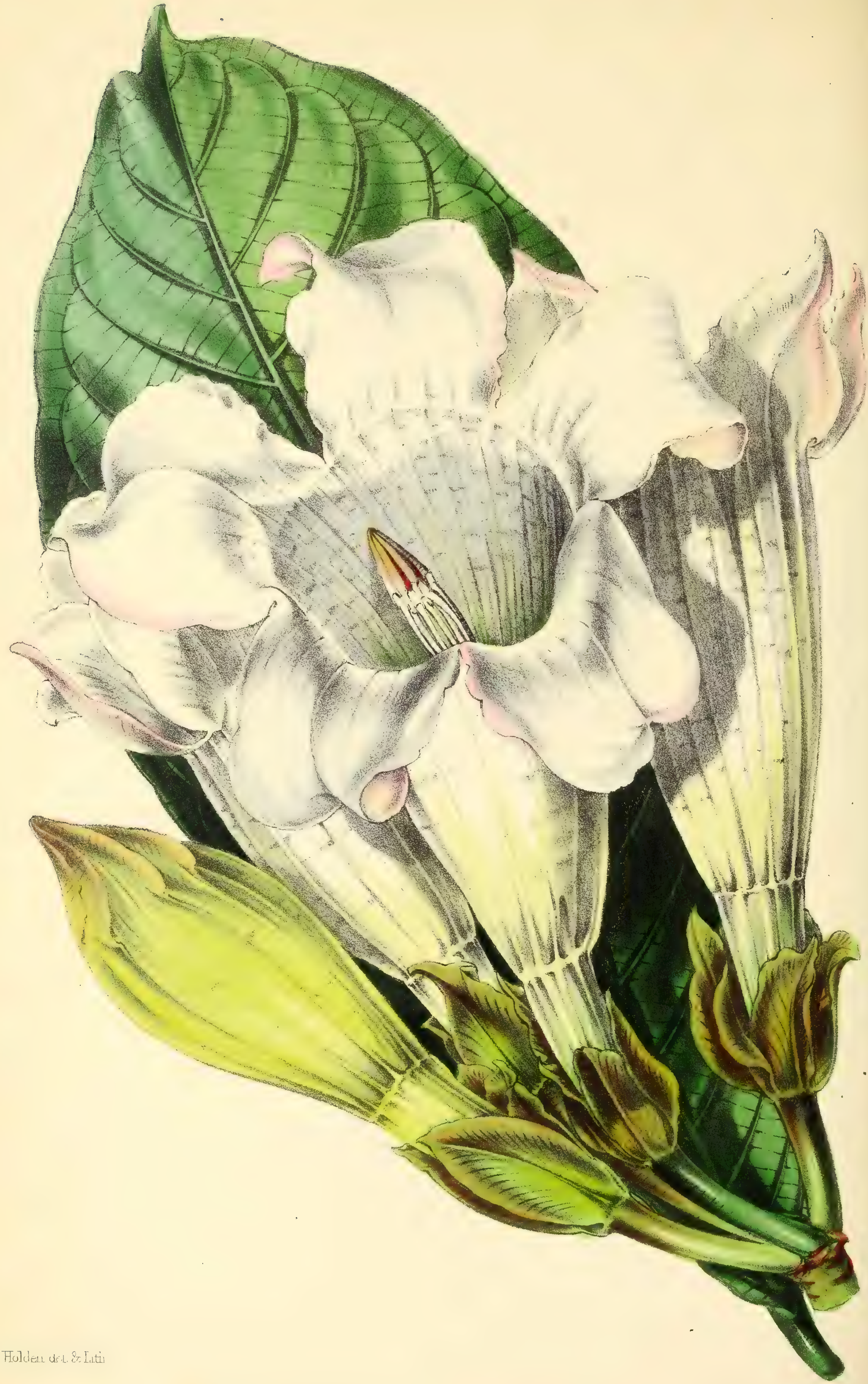
The form of vegetation in the genus varies very considerably; a great number have pseudo-bulbs of the form of true bulbs, surmounted by a pair of long, linear leaves, from within which rises the flower-stem, in some a few inches high only. The pseudo-bulbs of others are, as well as the leaves, very large, varying from the same shape to being greatly elongated, their foliage leather-like, in some instances even horny, and the flower-stems often feet in length. Various of the more uninteresting, in place of pseudo-bulbs have long leafy stems, with their inflorescence borne at their summit, in the panicle and branched-spike figure; in colour being of various shades of green, brown, and dirty white. The colour of the flowers of the better kinds is varied, as may be learnt from our figures. Many species have a very agreeable fragrance.

Of the botanical features of *E. verrucosum*, Dr. Lindley has the following:—"It is not very nearly related to any kinds hitherto discovered: belonging to the same set as *E. tesselatum* and *Candollii*, from all which its stems and flower-stalks, closely covered with minute asperities, and its rich crimson flowers, which are as much as three inches in diameter, readily distinguish it. The closest affinity is perhaps with *E. phœniceum*, a native of Cuba, and figured in the *Sert. Orchid.*, t. 46, and *E. Hanburii*, mentioned in this work (*Bot. Reg.*) at No. 60 of the miscellaneous matter of the present year (1844); but both these plants have the middle division of the lip two-lobed, and they are not, that we are aware of, fragrant." *E. verrucosum* possesses this property. It has been introduced to the country by one of the many importations of the Messrs. Loddiges, who received it from Mexico. A drawing was obtained for this work from flowering specimens in their collection in the summer of 1844. The subjoined woodcut illustrates its natural manner of growth.

If grown in a pot, it should be potted in turfy peat, charcoal, potsherds, &c. It is more characteristically accommodated when attached to a block of wood, and suspended in the *Orchid* house; in either case, it should in other respects be treated like the *Epiphytal* section; that is, allowed plenty of heat, moisture, &c., in the growing season, being kept cooler when resting.

Epidendrum is from *epi*, upon, and *dendron*, a tree; in allusion to the way members of the genus grow naturally.





S Holden del. & Lith

Beaumontia grandiflora.

BEAUMÓNTIA GRANDIFLÒRA.

(Great-flowered Beaumontia.)

Class.
PENTANDRIA.

Order.
MONOGYNIA.

Natural Order.
APOCYNÀCEÆ.

Generic Character.—*Calyx* of five foliaceous, unequal, erect segments. *Corolla* with a short tube and a large campanulate five-lobed limb; lobes erect, ovate; throat destitute of scales. *Stamens* five, inserted in the throat of the tube, exserted; anthers sagittate, beardless, cohering to the stigma: hind lobes without pollen; filaments free. *Style* twisted. *Ovarium* two-celled, surrounded by a hypogynous five-lobed ring. *Stigma* oblong, with a bifid point. *Follicles* two, large, combined, but at length separating. *Seeds* furnished with a tuft of hairs at the umbilical end.

Specific Character.—*Plant* a climbing evergreen shrub. *Leaves* broad, oblong-ovate; with a little point, tapering towards the base, smooth and shining above, but rather downy beneath. *Calyx* downy. *Corolla* large, white, greenish outside near the base, and dark throat. Young leaves and branches rusty.—*Don's Gardening and Botany.*

Synonyme.—*Echites grandiflora.*

The superior method of plant culture in the present day is in no case more conspicuously evident than in the truly splendid manner many of the finer stove and other climbers are induced to luxuriate and display their superb flowers as pot plants. A few years ago it was considered no small attainment to obtain a few solitary blossoms from any of the fine things alluded to, when they were favoured by being planted in the stoves, greenhouses, &c. Now it scarcely excites surprise when we meet with some of the really finest things in cultivation growing in pots, and loaded with bloom. We do not assume that climbing plants can be seen to advantage, or in their true character, growing in pots: necessarily they cannot, for climbers of any description can never wear a too wild and highly natural aspect. But we wish the horticultural achievements first, of flowering many of these plants at all, and next, to doing so in such a superior manner in pots, to be properly estimated.

Beaumontia grandiflora is one of the finest of the class of plants above spoken of. It is a stove climber, a native of Chittagong and Silthet, where it was discovered by Dr. Wallich, and by him sent to this country, about 1820. The plant is strong-growing, and has opposite, oblong, dark-green smooth leaves. Its flowers are produced in corymbs, which are axillary or terminally borne, and are very large, funnel-shaped. Under favourable culture, it flowers very freely from May to July. In its natural state it does so from November to June.

Like various other similar plants, it is most at home when planted out in a suitable situation; and, under such circumstances, is most worthy of admiration. But successfully cultivated in pots, it would constitute an object which, considered in an ornamental light, would yield a large amount of satisfaction.

We could wish to see the skill of the culturist more extensively brought to bear upon the fine race of plants of which we write; for, apart from the splendour they possess in themselves, and the charming variety they create in collections, the majority have the essentially valuable property of beginning to flower almost as soon as they commence growing (which of course is in early spring), and of continuing to do so the whole period they grow. Limiting the extent of root-room allowed them, but maintaining all their roots in good health, by plunging the pots which contain them, giving others bottom heat, &c., are principal points of management requiring attention when endeavouring to grow them in pots.

Increase of *B. grandiflora* can be effected by seeds, or cuttings, which strike freely under a bell-glass, with proper management. Decayed leaves and loam, or loam and peat will be found a suitable soil.

We are indebted for the opportunity of preparing our drawing, to the attention of Mr. Brewster, gardener to Mrs. Wraye, of Oakfield, Cheltenham, in whose garden it was taken.

Dr. Wallich is the author of the generic name, which he gave in honour of the late lady of Colonel T. Beaumont, of Bretton Hall, Yorkshire.

PARK AND VILLA SCENERY.

There is nothing which confers more beauty upon a country than the appropriate decoration of selected portions of ground; and this it is which stamps the peculiar character of British Scenery. We pretend not to enter into the science or minutiæ of the Picturesque; but it cannot be irrelevant to devote a few pages to the consideration of subjects connected with trees, and their adaptation to certain localities set apart for the purposes of ornament. In so doing, not only will reference be made to acknowledged authority, but recourse will be had to examples which may be considered as models worthy of more general imitation.

In the present instance, we select a pattern from an estate of very high pretensions; and though prohibited, by motives of delicacy, from individualising the property, our readers may rely upon the general correctness of description.

We shall have frequent occasion to allude to particular trees, and therefore—in full conformity with the avowed object of this periodical—the *botanical* characters of each will not be overlooked. Their effect in the *picturesque*, whether as single objects, or in composition as groups, must be deemed paramount; and here we may pertinently cite the authority of the Rev. William Gilpin—a writer whose works ought to be in the hands of every gentleman who professes to be an admirer of rural scenery.

"Picturesque ideas," he says, "lie not in the common road of genius and learning. They require, perhaps, a distinct faculty to comprehend them—at least, they require more attention to the scenes of nature and the rules of art than men of letters in general, unless stimulated by a peculiar inclination, bestow upon them: such men, therefore, are improper judges."

The choice of a situation whereon to create a great place is an affair of considerable moment. This is not at the command of many; and if we were to lay stress upon the opinion of the late Mr. Loudon, it might nearly amount to an impossibility. He said, that "it is on situations considerably elevated, and at the same time varied on the surface, that the art of Landscape Gardening can affect the imagination; and without operating on the imagination, no work of this art, or of any other, can ever be worth notice as such. No man of good taste will ever make choice of a low, flat, dull, sleepy situation, and a rich loamy soil for a country residence."

In searching for a model whereupon to form an estimate of what must be considered a fine property, well arranged in all its parts, we are tempted to select an estate which we have visited, and may be said to have gone over; thus acquiring a personal knowledge of its construction and laying out, sufficient to verify a printed description that is faithful in its detail.

Originally, the land in the greater part of its site was what might have been called a poor heath; that is to say, there was heath-soil (peat, so called) at the surface, sufficient to carry a covering of ling; but the subsoil, to a great extent at least, abounded with stiff and binding earth, congenial to the growth of the oak. Advantage was taken of these conditions; and thus a noble woodland was created, which now extends over four or five hundred acres. The property, which, about thirty years ago, was in the midst of this heathy waste, is now in high perfection, and, in description, admits of three divisions. It is approached, on two sides, by well-formed, rather circuitous, carriage-drives, branching out from the high roads. The main approach is above a mile long, and is adorned by fine native trees, all planted in groups or masses. This mode of planting is peculiar, and evinces the taste of the contriver and executer, because it enabled him to suit each tree to its appropriate soil; so far, at least, as the natural capabilities of the several portions of land permitted. And as it must be evident to every philosophical admirer of "the woodland," that a mass of verdant and flourishing trees, consisting of one and the same species, is superior to an heterogeneous admixture, where one sort flourishes as in contrast with another, debilitated by a soil antagonist to its constitution, we earnestly advise proprietors to study their land, and its capabilities; and then to adopt the practice of select planting, upon the principle of adaptation: by which, if they attain not to much variety, they will, at any rate, secure elegance of form and vigorous growth; for the former is mainly dependent upon the latter.

The planting upon the estate in question was executed in masses of one kind in one place, and it included shrubs as well as trees: the herbaceous tribes, and the annual flowers in the dressed grounds about the villa, were arranged much in the same manner. In 1844, when we saw the grounds, the peculiarity of the surface-soil showed itself in all the lawns, where the covering was literally close-shorn heath, or ling, with only a very small proportion of poor wiry grass. True it is, that the great heat and long-continued drought had then produced baleful effects on the herbage of every kind, and verdure was generally failing, yet enough remained to demonstrate the character of the native soil.

As we enter the gate by the first lodge, and pass through the devious winding road, we find oaks blended with a few larches, then chestnuts and a few Scotch pines, then sycamores, limes, elms; again oaks, larches, spruce firs, Scotch pines, beeches; and lastly, after approaching the home-plantations, or park-enclosure, pines and firs mixed. In these exterior plantations, a considerable portion of the ground is preserved in its original wild state, being covered with the heath and dwarf-furze: this circumstance was pointed out to us by the proprietor, in 1844, and its effect was most striking. The romantic wildness of the scene was such as to cause a perfect blending of natural with artificial beauty, and this was so admirably managed, that as we approached the second fence, the former became gradually softened into the latter; so that beyond the inner entrance gate to the park, the trees—chiefly of the pine and fir kind—are so thinly scattered, that each has ample room to extend all its branches, from the base upwards, without being crowded by the adjoining trees.

We are delighted to meet with a written authority which confirms and amplifies what we saw and passed through, several years after the description referred to was penned by the late Mr. Loudon. Then—that is, at the former period—many of the subjects, though rich and thriving, were small; but in 1844 a fulness of growth had been attained, which demonstrated the skill and judgment of the designer.

He had been assisted, doubtless, by a landscape gardener of great judgment, but the proprietor himself was the actuating mainspring; for, of the more than a million trees thus presenting themselves in detail to notice, all in symmetrical beauty and in natural position, every one had been planted by him, under his own supervision, with the exception of a very few lordly oaks, elms, &c., seniors, whose ages far surpassed those of any one now living on the demesne.

By trees planted in the order above described, so as to develop all their individual beauties, the utmost effect is produced, and this is also increased by judicious pruning, particularly as affects the fir tribes. These trees are in general far too thickly planted, whence they draw each other up, and by the lashing and crossing of the branches, every appearance of figure or proportion is speedily destroyed. When firs or pines are planted, as here, at proper distances, a few trees, comparatively speaking, "produce the appearance not only of a thick plantation, but of one of the greatest variety, and a continually varying succession of outline presented to the eye, when driving along." Such, at least, was the opinion of Mr. Loudon.

Gilpin, writing of the Scotch fir, which, he says, is commonly held in contempt, observes, that "it is seldom planted as a single tree, or in a judicious group, but generally in close compact bodies, in thick array, which suffocates and cramps the trees; and if they ever get loose from this bondage, they are already ruined; their lateral branches are gone, and their stems are drawn into poles, on which their heads appear stuck as on a centre; whereas, if this tree had grown in its natural state, all mischief had been prevented. Its stem would have taken an easy sweep, and its lateral branches would have hung loosely and negligently, and the more so as there is something peculiarly light and feathery in its foliage."

While on the subject of the Fir tribes, a few lines may be devoted to the elucidation of their botanical characters. All of them are arranged under the Jussieuean Order—*Coniferæ*—Cone-bearers. The flowers, male and female, are produced on the same individual, or upon two trees (*i. e.* are *monœcious* or *diœcious*). The male or sterile flowers consist of a single stamen, or of a few united together. The *anther* is two or many-lobed. *Fertile* flower is usually in cones. *Ovary* in the cones spread open, and appearing as a flat scale, without style or stigma. *Fruit* consists of a solitary naked seed, or of a cone. The order comprises two tribes. 1. The *Abies* or *Pine tribe*, of which the genera are, 1, *Pinus*, the true Pine; 2, *Abies*, the Spruce Fir; 3, *Larix*, the Larch. This last contains the true Cedar of Lebanon. *Cunninghamia* and *Araucaria* are noble trees of recent introduction. Tribe 2 contains the Cypresses. The genera are, *Cupressus Thuja*, or Arbor Vitæ; *Juniperus*, of which the common Juniper is one species; another is the Virginian Juniper, or red

Cedar. These are all beautiful when grown in soil which they affect. *Cunninghamia*, *Araucaria*, and *Dammara*, are magnificent furniture for the noble lawn; and on this subject we refer to an article on the *Pinetum* of Dropmore, which appeared in vol. iii., 1128, of the late Mr. Loudon's *Gardeners' Magazine.*

The classification of trees in the woodland scenery around a mansion is a novel feature: the park demands the skilful adaptation of single trees, or of small groups placed in situations where a new effect is produced by every change of position; but another department remains to be considered, and upon this mainly depends the grace and beauty of the whole,—it is the gem set in the centre of the sylvan boundary; we allude to—

The *pleasure-grounds* in the vicinity of the mansion. In this fine estate, created by the present proprietor, these grounds present a lovely picture, diversified with every species of softened beauty upon which the eye can delight to repose. A noble lawn extends in one connected whole, but so modified with fine masses of trees and planted clumps, that there is no platitude or sameness to be detected. In former years a wretched piece of water lay by the side of a steep bank. This pond has been extended to 30 or more acres, by filling up a valley, and other pieces of water have been added, to the extent of 10 acres more. This small lake is varied in its figure: it is not a flat, uninteresting sheet of water, but is so disposed, so varied in its figure, so interspersed with trees and plantations, aided by one or two bridges, apparently of rough unhewn stone, that the whole water-scene is quite disguised and broken. Wild fowl resort in abundance to the water, and everything conspires to add romantic beauty to the whole. The planting of the home, ornamental grounds, is in beautiful keeping. Above 13 miles of noble gravel walks lead through its varied scenery.

The islands, promontories, and shores of the pieces of water, overhung with trees, are most judiciously placed; while near the dwelling, trees have been placed in small groups, the roots of many so judiciously raised above the surface as to give a slight, but yet natural protuberance. Among these trees stand pre-eminent the scarlet oak, (*Quercus coccinea,*) which flourishes here with peculiar luxuriance. The tree is one of the finest of the American species; its leaves are six or more inches long; they change to a rich scarlet, and continue long on the tree. Nothing, in point of colour and figure, can rival this oak, unless we except a perfect copper beech; both are admirable, and calculated to stand as solitary trees in conspicuous situations.

Grotto Scenery is here and there attempted: in one instance a rude garden, made up as it were of rocky masses on the sloping sides of a vast excavation, is surmounted by a terrace-shelf, which passes round it. In showery seasons, much water enters, and remains within, forming a pond with a side of rock: in 1844 the object was defeated by the excessive drought, and the cavity was dry; but one circumstance excited particular attention, and it is worthy of notice. The soil on the sides was evidently yellow clay. At four places near the surface, but still on the sloping sides, as many large Hydrangeas were planted among the masses of rock;

the heads of flowers were quite *blue*, every sign of the usual pink tint being absent; while on the terrace-border, not ten yards remote, the same plant retained the customary hue. We were assured that no attempt had been made to effect this change; and, indeed, we observed that in a few places, and near the former plants, the water which oozed from the yellow loam was deeply stained with solution of iron.

The *Blue Hydrangea*, and the mode of its transformation, were at one time subjects of some interest. We possess a letter from an Italian Count, addressed to us expressly thereon; but cannot now recur to it. The writer described particularly the method adopted in Italy; and in his attempts to imitate them here, he alluded to a considerable proportion of fine iron-filings, or rather of knife-grinder's dust, mixed carefully with black-sandy peat. Among all the receipts given verbally, or in print, we have found none that produced the desired effect. That of the Italian Noble might succeed, but it was till now lost sight of; certain however it is, that the soil about the rocky bank was a ferruginous clayey loam, and the water which passed near the Hydrangeas appeared of the colour of pale malt liquor: hence, it was a solution of per-oxide of iron in some acid; most likely the sulphuric.

We have thus digressed from the delightful subject of this communication, and our allotted space is filled. May we be permitted to hope that the few imperfect hints thus offered will be productive of some good, by inducing those who possess means and opportunities, to improve their scenery by the scientific introduction of picturesque masses?

REMARKS ON THE CAMELLIA.

This noble plant being so well known, and to a greater or less extent, with various degrees of success, cultivated by almost all who have any pretensions to be considered growers of exotics, we might have some scruple in penning the remarks we are about to make, did we not feel more than assured that, however little anything that may be stated respecting it, tends to place it in a more engaging light, it will be highly acceptable.

We are led to notice it because—seeing some time ago a house principally occupied with *Camellias* which were turned into the open border, in flower—we have scarcely since, beheld a collection in any state with pleasure, certainly not with feelings of satisfaction. A brief account of the plants we allude to, and the circumstances under which they were flourishing, will better enable us to establish the position respecting the *Camellia*, we are anxious to assume. The house, then, in which they were growing was altogether of the old-fashioned description. It was an elevated span-roofed building, constructed of wood, with one side and the ends glazed; the mansion to which it was adjoined forming the other side. Its aspect being west, its elevation considerable, the frame-work and sash-bars all of wood, and the glass in small panes, it will be imagined a very great degree of *shade* prevailed in the interior; the last point we are desirous of drawing particular attention to.

The plants were planted against the back wall, at the ends of the house, and some specimens in circular compartments, in the middle of the floor; the borders were raised above the floor, the soil which composed them being supported by stone edging, nine inches to a foot high. No particular method of training the plants was carried out; nor were they trained at all further than those against the wall having some of their main stems simply fastened to it, to hide that portion seemingly occupied by the plant, the remainder of which was allowed to extend laterally, or in the direction of the middle of the house. In short, beyond the training good management would insure being carried out upon them, they were permitted to grow as naturally as it can be imagined they would. We need not enter into further detail than state, that at the time they came under our observation they had grown to very fine specimens, the foliage being of the healthiest deep-green hue, and that they were enveloped in a profuse display of bloom, forming objects which, for splendour, could not be equalled by any other plants.

As it was the *Camellias* flowering in the manner, and existing under the circumstances, described in the foregoing paragraph, that most strongly attracted our attention to their superiority when so growing, we have gone into minute detail respecting them, to enable us the more confidently to draw the attention of our readers to the object we have in view in the present paper; which is, to show the value of growing the *Camellia* as a turned-out plant, but more particularly to bring into notice the great extent to which circumstances will permit of its being so grown; and to embrace this opportunity of recommending attention to any points in the general management, too little regarded or not at all understood.

Our first point—the superior manner in which the *Camellia* flourishes when grown in the open border—we need say little upon; for any one paying the least attention to plants, and the causes which contribute to their flourishing or prevent their doing so, will at once appreciate the advantages such a plan affords. The consequence of any plant having a free and healthy medium for its roots, is, that it quickly attains a considerable size: the *Camellia* having done which, it is in condition, presuming that it flowers as *Camellias* are wont to do, to be seen to true advantage; to such advantage, in our estimation, as it ought ever to be seen. The same effect is created by the small ragged-looking plants that we usually meet with, bearing their two or three blooms, as large specimens of any kind of plant having small flowers create, when they sparingly bear blossoms. All deservedly disregard the plant in the last-instanced case, and they would as equally do so the *Camellia* bearing two or three blooms only, whatever value it might be of as an individual variety, if once an opportunity of seeing the *Camellia* in its true character was afforded them. It is true, they can be grown to large specimens in pots, as they do, and frequently are; but it is the exception to see them really healthy, except in rare instances, when thus growing. The small spare foliage, its unhealthy-like aspect, and the short, scraggy branching of the plants, added to these appearances when they flower, the smallness of their blooms, &c., is, it must be allowed, weak evidence in favour of growing large plants in pots or tubs. Indeed the unfrequency with which we meet with large specimens where they have only been accommodated in the way under consideration, is a sufficient test of what we now advance; for it is too frequently found that, beyond a certain age, *Camellias* cannot be induced to maintain a passable appearance under pot culture. This is invariably the case, where collections are grown. In such places, an evil extensively prevails of keeping too great an assortment. There is the less excuse for such an error being cherished, when it is recollected how little distinction of colour exists among the different varieties. The naturally consequent evil flowing from this source is, that no one plant is justly regarded and cultivated, through inability, from want of room, to accommodate any properly. This brings us to consider the extent to which *Camellias* may be well grown in an easy manner, by planting them out.

It is of course understood that by planting them out, doing so under glass is meant; for although considerable success has in some instances attended their being grown in sheltered situations in the warmest parts of the country, in the open air, it never will be able to be carried out to any extent, if even better success had been experienced; and for this reason, that the earliness with which *Camellias* flower, renders them very liable to have their bloom buds destroyed by winter weather. And from the same cause, it rarely happens their bloom can be enjoyed, except as cut flowers.

No obstacle worthy the name of such exists where a greenhouse is at all possessed, to some suitable situation being found for the accommodation of one or more plants, favouring them with the advantage of having no restrictions to the extent they are allowed to root and grow. The fine feature they constitute when flowering, sufficiently justifies their being maintained there the whole season; but, in addition to this, the dark-green foliage forms a pleasing and refreshing object at all times. It is too frequently the case that greenhouses can seldom accommodate more plants than are placed there for preservation; but, as we have in another place recently stated, these structures by judicious management may be rendered more free of the kind of plants alluded to, than they usually are. When such is done, the principal obstacle to their being rendered the interesting places of resort they ought at all times to be, is removed.

We take now, of course in our mind's eye, those gardening establishments in which perhaps one such house only exists. The situation in an erection of the kind alluded to, in which a *Camellia* should be placed, is easily determined; the more isolated the position it occupies the better for its welfare, and for its being seen to advantage. Great care should always be taken that it is not so placed that its roots or branches come within the drying influence of the flues, hot-water piping, or whatever the heating apparatus may be.

The *Camellia* is peculiarly adapted to the purpose for which we have just recommended it. Blooming as it does at a time when flowers are so scarce, one good specimen in bloom, would have an enchantingly enlivening effect. And then, through the summer, what better than its fine foliage to contrast with gay tender annuals and other showy plants, usually grown under such circumstances?

In preparing to turn any plant out, the principal object is to insure effectual drainage; for, though the *Camellia* likes abundance of moisture, no plant suffers more from stagnation of it about its roots. A large body of soil is not required to enable a plant to flourish; good soil, being chosen, a comparatively small quantity is sufficient. A rich maiden loam, with a proportion of rotten dung, or peat and loam, is suitable. Old specimens can easily have the soil in which they are growing enriched by liquid manure, &c.

It is not universally understood how advantageous it is to the *Camellia* to grow it in partially shaded structures. It always flourishes best in such; for its foliage cannot bear—indeed is invariably much injured by—exposure to strong light; but during the period it is making its annual growth, it is essentially necessary to well shade whatever structure it may be perfecting in.

We may appropriately introduce, in conclusion, a few words on the possibility of having, by skilful management, *Camellias* in flower six or eight months in the year. But, to do this, they must necessarily be cultivated in pots. It only requires healthy plants to commence with, every means being taken to maintain them so, and the early inflorescent habit induced in them by most careful—in other words, very gradual and gentle—forcing. The principal point is, after they have flowered, to develop and mature the annual growth—which it will be imagined there is some difficulty in doing in December and January. There is, however, no obstacles which perseverance may not overcome, and which is not worth overcoming, to enable a display of *Camellia* flowers to be had from August to April. The bloom continues perfect in the winter a much longer period than it does as the season becomes more advanced.

Camellias, under any circumstances, are greatly benefited, at the time they are growing, by the careful application of artificial heat, more so than by maintaining a high temperature through keeping the house closed, which, in place of properly aiding the young growth, only tends to its elongation. It is a great oversight not to practise thinning the bloom-buds of these plants, repeatedly and extensively, before they approach complete maturity. The advantage of doing so is very imperfectly, if at all, understood.

ON PLANTS TO FLOWER LATE IN AUTUMN.

It is too often the mournful experience of all acquainted with the flower-garden, and the whole of the out-door floral department, how very frequently the beauty of the plants is destroyed in its very zenith by frost, as early as the beginning of September. When frosts occur thus early, they bring a change over the whole face of nature, and, comparatively speaking, sweep away every vestige of a flower at one blow. The effect of such frosts is ever lamentably evident; but the mischief accomplished is increased in proportion as they are early or severe. And, however much we may regret the occurrence of what we describe, we can do little to soften the traces of desolation they leave behind; and frequently less, by guarding against the mischief we sometimes discover to be approaching. It not unfrequently indeed happens, that we are able to discover the approach of our enemy, but the utmost we can do by way of fortifying against his attack is, to fly to the various descriptions of covering materials, employing them to guard the beds in the most conspicuous situations, or the choice masses of plants, and it may be, some particular specimens flowering in a favoured point of view, &c. What is sometimes practised in cases of early frost is, dashing water upon the frost-bitten vegetation immediately before it commences to thaw; and very fair success, when freezing has not been too keen, sometimes results from such a washing, in the instance of *Dahlias* or other succulent plants. But, as we have already said, all we can do amounts to a mere trifle; for though we may be successful in saving our plants to the extent we have stated, we are too well pleased with such success to risk its being lessened; and as the plants saved by our exertions are invariably of importance, we forthwith hasten their removal into complete security, by taking them up and propagating, or disposing of them as circumstances may require, &c. Therefore, the conclusion we arrive at here, and which, without exception, is practically arrived at, is, that upon the first appearance of frost, the floral season is over. We naturally, then, turn to our conservatories, greenhouses, &c. But here, too, things begin to have a faded appearance; the energy of our plants is departing, their flowers droop, are weaker than they recently were, begin to be produced in less abundance; the liveliness of their colours, and their natural hues, no longer prevail. It being seen then, that the charming accompaniments of summer, both naturally and under artificial circumstances, are ceasing to exist at the season in question, we must apply to Art, and see what can be done when Nature is assisted by her best aid. The succeeding paragraphs will be devoted to doing so.

It is well known that among the almost infinite variety of plants with which we are acquainted, there are those which, by developing their flowers at the season Nature induces them so to do, gratify us by their presence throughout the various seasons of the year. Great accommodation and large means enable such to be commanded to a gratifying extent, as regards numbers and variety. But limited resources naturally can attain but few of the luxuries we allude to. We purpose therefore to supply, in some measure, the deficiency, by bringing into notice some of the plants which are most suitable for our object, and to show the manner in which they can best be made so.

The season we have in view—from the close of autumn to the period when forced flowers come in—is in a singular manner distinguished for scarcity of blooming plants. One naturally blooming then, and almost invaluable from doing so, we scarcely need name it: is the *Chrysanthemum*. Beyond this, we shall instance none as blooming at their own season, as it is our purpose to show what can be done by retarding those which flower at other periods. The *Camellia* we have shown the value of; next, perhaps, for usefulness, are *Pelargoniums*—the scarlet and fancy kinds; *Heliotropes*, shrubby *Calceolarias*, *Aloysia citriodora*, several sweet-scented leaved *Pelargoniums*, *Fuchsias*, *China*, *Hybrid China*, and many late-flowering *Roses*, &c. Those we have instanced are specimens of the kind of plants we mean. And here it may perhaps be well to introduce a caution, to prevent their being spurned in consequence of their commonness. Many other choice plants of a similar description, the better kinds of annuals, &c., are quite as appropriate for our purpose. And now as to the best method of growing them. They all are, it is at once perceptible, things that are cultivated without any difficulty; but as it is not upon the profuseness of the manner in which they flower, nor upon their individual or collective display of bloom alone, that their interest and beauty depends, but upon the extent to which they separately are handsome specimens, in conjunction with their being induced to flower only at the period their bloom is required, some skill is requisite.

Not the least important part of the matter is the choosing proper plants to commence with: they should not be mere cuttings, nor those old and worn-out, but vigorous well-established plants. In the case of the soft-wooded quick-growing things, the size it is wished they should attain must regulate the time they are commenced to be cultivated, and also the extent of pot-room allowed them. Their pots should ever be kept plunged in some suitable situation, and should be rather small in proportion to the plants than otherwise. Training consists in dealing with them according to their habits, inducing them to become as handsome specimens as possible. All their bloom should be plucked off before it comes to maturity, up to a certain period, when it may be left to expand as it is wished to employ it. The sweet-scented leaved plants mentioned are so distinguished from their possessing that property, and are very useful as giving an interesting variety. The Roses alluded to are amongst the most valuable things mentioned, and of course, from their naturally late-flowering habit, will bear encouraging treatment.

To prevent disappointment from the extent to which any of the plants mentioned may be expected to flower, we may allude to what every one must understand, but which many may overlook. It is the fact that, although the energies of the plant are not expended in perfecting flowers, they are considerably drawn upon in producing those which are repeatedly removed; and farther, are directed to the increase of the size of the plant. There are of course many very excellent plants that can, by skilful management, be induced to flower in the way we are directing attention to, and which we have not instanced:—the *Double Chinese Primula*, and numerous other greenhouse and stove plants.

FLORICULTURAL NOTICES.

NEW OR BEAUTIFUL PLANTS FIGURED IN THE LEADING BOTANICAL PERIODICALS FOR MAY.

Ægi'phila grandiflo'ra. Sir W. H. Hooker writes :—"Of the native country of this very pretty shrub, I regret to say we are ignorant. We are indebted for flowering specimens, in December, 1845, to Mr. Henderson, of Pine-apple Place, Kensington, who received plants from Mr. Makoy, of Liege, under the erroneous name of yellow *Rondeletia;* and about the same time also from Messrs. Lucombe and Pince, of the Exeter Nursery. It is quite clear that this is no *Rondeletia,* nor any *Rubiaceous* plant, but a true *Ægiphila,* with singularly large yellow tubular flowers, well worthy a place in every collection, flowering as it does in the middle of winter in a warm stove, and then the flowers are succeeded by the glaucous-blue berries." *Bot. Mag.*, 4230.

Barnade'sia ro'sea. "This singular and beautiful genus was named, by Linnæus, in honour of a Spanish botanist, Michael Barnadez. Eight species are characterised in the 'Prodromus' of De Candolle, but so imperfectly, that though probably the present is included among them, I think Dr. Lindley has done wisely in making of it a new species ; and he has given an excellent specific character, here quoted, and a very characteristic figure. It is a native of South America, like all the other species, but its exact locality is not noted. All that seems to be known about it is, that it first flowered in the Duke of Northumberland's collection. With us, it blossoms in the stove in the winter months, and is really a plant of great beauty, from the bright deep pink of its flowers. I possess specimens of what I consider the same, both from Peru and Brazil, and it probably has a very extensive range in the continent of South America." *Bot. Mag.*, 4232.

Cedro'nilla palli'da. Frederic Scheene, Esq., gave seeds of this plant to the Horticultural Society, in whose garden it produced flowers last autumn. It is a native of the North of Mexico, and "as a species it is known by its leaves being invariably blunt, and somewhat heart-shaped, even next the inflorescence, by their under surface being so closely covered with a very fine down, that the little pits or secreting cavities are concealed by the tube of the corolla being very little longer than the calyx, and its lobes being rounded." Its labiate flowers are produced in spikes, and are pale-red. It is expected to prove a useful flower-garden plant. *Bot. Reg.*, 29.

Fagopy'rum cymo'sum. A *Buckwheat,* a native of Chinese Tartary, whence it was received by the Horticultural Society from Captain Munro. Of some authors, it is *Polygonum cymosum,* and *P. acutatum.* "It is a hardy perennial of the easiest culture, growing freely in any common garden soil, and increased either by seeds or dividing the roots. It flowers the first season from seed, and is well worth cultivating as an annual ; for it blooms freely from July to September, and grows from one to one-and-a-half foot in height, forming a rather spreading bush. Like other *Buckwheats,* it is a favourite resort of bees." *Bot. Reg.*, 26.

Mussæn'da ma'crophylla. Dr. Wallich found this species on the mountains of Chundragiri and Nagaigoon, in Nipal, blossoming during the rainy season, and bearing fruit in winter. Dr. Lindley writes :—"Like other plants, it requires a season of rest, and therefore must be kept rather dry during the winter ; for, if allowed to continue growing, it will ultimately become feeble." *Bot. Reg.*, 24.

Maxilla'ria macrobul'bon. This species, Sir W. Hooker states, was "sent from Sierra Nevada, Santa Martha, by our collector, Mr. Purdie, to the Royal Gardens of Kew. It has some characters in common with *M. aromatica,* Hook. Exot., Fl. t. 219 ; and with *M. cruenta,* Lindl., Bot. Reg., 1842, t. 13. From the former it may be known by the larger size in every part of the plant, by the scentless flowers and different shape of the lip ; from the latter, by its small differently-coloured blossoms, by the very dissimilar labellum, and the absence of the crimson blotch on its under side." *Bot. Mag.*, 4228.

Oxyram'phis macrosty'la. Writing of this plant, Dr. Lindley states :—"It is a very pretty greenhouse shrub, which flowers in October and November, and grows freely in sandy loam and peat. It rises to the height of four or five feet, and loses its leaves in the winter, at which time it should be allowed to sink to rest. Its flowers, half crimson and half rose-coloured, are very pretty, and appear in short close racemes from every axil. The leaves are much like those of some *Tephronia*." The Horticultural Society received it in 1837, from the Botanic Garden, Saharanpore, from Dr. Falconer. *Bot. Reg.*, 28.

Oncid'ium la'cerum. Among the species of *Oncidium*, to which the general term of Chive-leaved may be given, and the type of which is *O. cebolleti*, this, and *O. longifolium*, are the handsomest. It agrees with that species in the length of its leaves, which are as much as two feet; but it differs in having a smaller panicle, sharp column-wings, very narrow falcate side-lobes on the lip, and a single-ridged tubercle at the base of that organ, placed at right angles to a flat, somewhat concave swelling, which almost connects the side-lobes." The Messrs. Loddiges received this plant from Panama, where it is a native. It flowered in their celebrated collection in 1844. *Bot. Reg.*, 27.

Pingui'cula orchi'dioides. "Among the many interesting objects to be seen at the Royal Gardens of Kew during the latter part of the present winter (1845-6), was a number of pots of this most lovely species of *Pinguicula* in full blossom, plunged in Sphagnum and other mosses, in cool stoves, where they flourished as well as if they had been in their native mountains of Mexico. Living roots were sent to us by Mr. Repper, from the Real-del-Monte, which, as soon as planted, began to exhibit the two forms of leaves here represented, the upper or inner ones almost resembling those of an *Echeveria*." The lower leaves are "small, numerous, closely imbricated, ovate, acute; the apex a little reflexed." From the centre of the tuft, formed by the two kinds of leaves, the flower-scapes rise in considerable numbers, bearing bright-purple, *Violet*-like flowers, which have a long curved spur. *Bot. Mag.*, 4231.

Si'da vitifo'lia. "One of the handsomest of the genus," states Sir W. Hooker, "but too much of the '*Mallow*' kind to be a general favourite with cultivators. Seeds were sent from Chili to Mr. Veitch, by his collector, Mr. W. Lobb, in 1844; and plants blossomed in the greenhouse in May, 1845. The plant was first, however, brought to Europe by Capt. Cottingham, in 1836, and was cultivated in the open border, in Dublin, for three years, without any shelter. In England generally, however, it requires the protection of a greenhouse." This is *Abutilon vitifolium* of Dr. Lindley and other botanists. It is a tall-growing shrub, with alternate, cordate, many-lobed leaves; and bearing terminal, corymbose racemes of large, showy, bluish-lilac flowers. *Bot. Mag.*, 4227.

Sola'num lycio'ides. "This charming shrub was found by Mr. Hartweg in the Valley of San Antonio, in Peru, and flowered in the Garden of the Horticultural Society, in November, 1845. It has a neat habit; the flowers are of the richest sapphire-purple, enlivened by a bright-yellow eye, and in the wild state appear in clusters, so as to load the little spiny branches. The name is a happy one; for, in its natural state (as in No. 1302 of Mr. Hartweg's 'Herbarium'), it is very much like a dwarf *Lycium barbatum*." It is not new to Europe, having been known more than half a century ago. Under cultivation, "it is found to be a greenhouse plant, which appears to succeed in almost any sort of soil, but to prefer sandy loam, mixed with a little rough peat. To flower it well, it seems necessary to place it out of doors during summer, in some exposed situation, where it can remain till the end of September. By that time the flower-buds will be formed, and they expand in a short time after the plant is taken in-doors. It is easily propagated from cuttings, and must be regarded as a good addition to our autumn-flowering greenhouse shrubs." *Bot. Reg.*, 25.

Tore'nia eden'tula. "This very pretty annual made its appearance in some earth in flower-pots in the stove at Kew, and had, no doubt, come from some part of the East Indies. I at first supposed it was the *Torenia asiatica*, L., but a slight comparison of the calyx and flowers convinced me of my error; and I find it to correspond exactly with a species from Assam, in my Herbarium, marked by Mr. Bentham '*T. edentula*.' It is, probably, found also in other parts of our Eastern possessions, and will, doubtless, appear under that name in the forthcoming volume of De Candolle's 'Prodromus.' The broad calyx, as long, or nearly so, as the tube of the corolla, is very characteristic of this species, and the two deep purple blotches which render the blossoms so bright and lively, are conspicuous, even in my dried specimens." The plant is erect-growing, "but weak," branching much, the branches opposite, and square, with opposite ovate, acuminate, serrated leaves. The flowers are borne singly on peduncles which are axillary or terminal, and often clustered, and always shorter than the leaves; and are composed of a corolla, whose tube is partially inflated, of a greenish-purple colour, with a fine rounded-lobed limb, whitish, variegated with purple; the two lateral lobes each with a deep purple blotch. *Bot. Mag.*, 4229.

NEW OR INTERESTING PLANTS RECENTLY FLOWERED OR DESERVING OF NOTICE, IN THE PRINCIPAL METROPOLITAN NURSERIES AND GARDENS.

Achim′enes longiflo‵ra, *var.* The Messrs. Rollisson have a distinct variety of this fine plant, differing from the common *A. longiflora*, in being more dwarf and bushy in habit, and in having the under-surface of its leaves of a deep sanguineous hue. The flowers are more circular, and also much darker in colour.

Anther′icum cæru‵leum. A plant with long grass-like leaves, from the midst of which rises a large erect panicle of purple *Sisyrinchium*-like flowers. It was sent from the Birmingham Botanic Garden to the recent Chiswick Exhibition.

Bifrena‵ria inodo‵ra. This Orchi is in the collection of Messrs. Rollisson, of the Tooting Nursery. In general aspect it resembles *Lycaste Harrisoniæ*, but has larger pseudo-bulbs, which have at their apex a black marking, giving them the appearance of being tipt with horn. The leaves are also larger, and those which came under our observation were covered with minute warty excrescences. The flowers are about similar in dimensions and shape to the plant already mentioned, but the interior of their petals and sepals are of a bright rosy hue ; the lip is small, and curves underneath the flower, and is darker in colour than the sepals and petals.

Cu‵phea min′iata. A species bearing this name is flowering in the stove at Messrs. Rollisson's, of Tooting. It is an erect free-growing plant, with opposite lanceolate leaves, the margins of which, their surfaces, and in short the whole plant, especially the calyx, is beset with long bristly white hairs. The flowers are produced at the axils of the leaves, along the upper portion of the branches, with much freedom. They consist of a tubular calyx, green at the base, the upper part purple, but appearing almost white, from the number of the bristle-like hairs above described. The petals, two in number, as in the other species of this fantastic genus, are situated at the upper side of the mouth of the calyx, are circular, and intensely brilliant crimson ; at their base, and occupying the mouth of the calyx, are the stamens and anthers, both of which are enveloped in a brilliant light purple woolly substance.

Chiri′tia sinen′sis. A plant with oval crenate leaves, having long white hairs on their upper surface. The flower-spike rises six or eight inches, and bears two or three flowers at its summit. Flowers labiate, lower lip three-lobed, upper two ; interior of the flower marked in a ridge-like manner, with bright orange. The upper lip marked with the same colour on its inner surface.

Chlo‵ræa vi′rescens. This is a terrestrial *Orchid*, with glaucous green leaves, and a leafy flower-stem, situated closely upon which is its deep yellow flowers. The colour of its flowers renders it somewhat of a novelty among terrestrial *Orchids*. It was sent to the recent Exhibition of the Horticultural Society, by Mr. Cameron, Curator of the Birmingham Botanic Garden.

Ery′throchiton Brazi′liense. The Messrs. Lucombe, Pince, and Co., of Exeter, had this plant at the late Exhibition of the Royal Botanic Garden, Regent's Park. It is a fine stove plant, with long acuminate leaves, and bearing spikes of white and brown flowers, whose corolla has a large spreading limb, The calyx is brown, nearly as long as the tube of the corolla.

Hypocyr′ta stri′gillosa. A succulent stove plant, having straight branches and opposite lanceolate woolly leaves. The flowers are deep scarlet, singularly shaped, being tubular and almost closed at the mouth, which is a circular orifice, then suddenly swelling into a keel-shaped throat, which gradually tapers to the base. It is not a new plant, but is not frequently induced to flower freely. We have observed specimens blooming at Messrs. Henderson's and Rollisson's.

Ixo‵ra incar′nata. This is a very beautiful vigorous-growing stove plant, with glabrous opposite leaves, and peculiarly delicate flowers, which are produced with much freedom in corymbs. The tube of the corolla is very long and slender, of a delicate bluish colour. The Messrs. Loddiges have it in flower.

Jasmi′num dianthifo‵lia. An interesting plant, with opposite linear-lanceolate leaves, and small white flowers, which are terminally borne, and have a most powerful fragrance. It is a singular, rather straggling grower, but withal very pretty, though its flowers are but sparingly produced. The Messrs. Rollisson have it flowering.

Justi′cia semperflo‵rens. In the Nurseries of the Messrs. Low of Clapton, and Messrs. Rollissons of Tooting, plants bearing this name have for a long period been flowering. It is a species with ovate-glabrous leaves, and its flowers are produced in close spikes. The specific name is strikingly appropriate, for all its energies are expended in flowering.

MUSSÆ'NDA FRO'NDOSA. This is a singular and interesting stove plant, but not of recent introduction to the country. It resembles *M. macrophylla* in having those curious white bracts; its flowers are also very similar to those of that species. The plant, however, is altogether much smaller and far more interesting in appearance. The long-petioled glabrous leaves strikingly contrast with the white bracts, which are similar in size.

NORDMANN'IA CORDIFO'LIA. The Messrs. Low had flowering, in the winter season, a plant bearing this name. It is a hardy herbaceous plant, with tender green leaves, and producing a close panicle, six inches high, of watery blue flowers, the corolla of which reflexes in a curious manner as soon as it becomes expanded. We observed the same thing in flower at Pine-apple Place about the same time.

ONCI'DIUM PHYMATOCHI'LUM. From the delightful collection of the Rev. J. Clowes, of Broughton Hall, Manchester, a plant of this species was sent to the recent Exhibition at Chiswick. It is the first which has disclosed flowers in this country. It is a species of recent introduction, and attracted at the Exhibition a good deal of attention, as much on account of its singular appearance as from its novelty. The plant consists of large flat pseudo-bulbs and leathery oblong leaves; the one in question had two large panicles of singular *Brassia*-like flowers, which have a yellow lip. The individual blossoms are as much like those of some small-flowering *Brassia* as can be imagined. Nothing is much more familiar to our ears than the exclamation of strangers on first beholding *Orchid* flowers—"How like some insect!" &c. The resemblance of the mass of flowers borne by the plant of which we write, to insects floating in the air was complete, especially when viewed a little distance off. The slender branching of the panicles, compared with the flowers, was the cause of their being so.

ONCID'IUM CON'COLOR. The Messrs. Loddiges have several plants of this beautiful *Oncidium* flowering; it is a remarkable species, very unlike the generality of *Oncidiums*. It has rather small pseudo-bulbs, which are surmounted by a pair of rather narrow leaves. The flower-spike rises from the base of the pseudo-bulbs, bearing numerous flowers, which are wholly of the most pellucid yellow. The upper sepals and petals are ovate. The lower sepal is forked, large, and extending beneath the very long, broad, brilliant, yellow lip, which it approaches in a manner so as almost to appear as if it were supporting it.

RHO'DOSTEMMA GARDE'NIOIDES. The Messrs. Veitch had this plant at the last Chiswick Exhibition. It is an open-branched shrub, with oval leaves, and bearing freely clusters of whitish long-tubed flowers, which are of short duration only. We have observed it in several of the London nurseries through the past winter season.

TETRATHE'CA VERTICILA'TA. This is a most beautiful little greenhouse plant, of slender growth, having whorls of small linear leaves thickly studded along its branches; at their axils the flowers are produced in great profusion on short peduncles. The flowers principally consist of a flat circular corolla, which is bright-blue purple, deepest at the base of the petals. The subject of this notice was sent to the last meeting of the Horticultural Society in Regent Street, by the Messrs. Henderson, of Pine-apple Place. The Messrs. Low, of Clapton, flowered plants of it in the beginning of this year; but their plants, from being in a warm house, did not produce their blossoms of the fine hue of the one above spoken of.

THUNBER'GIA FRY'ERI. This is a beautiful variety of this genus, growing freely, and flowers in the greatest profusion. Its flowers, smaller than some other varieties, are brilliant pale orange with a greenish white throat.

THUNBER'GIA CHRY'SOPS. We cannot refrain from noticing this plant as it recently appeared at the Royal Botanic Society's Exhibition, from Mr. Gaines, Nurseryman, Battersea. It was growing in a rather small pot, and trained to a fan-shaped trellis. It literally was studded all over with bloom-buds, though few flowers were expanded upon it. But those out were remarkably fine, and the plant was luxuriant, and the picture of health. It had apparently been favoured with bottom-heat. Our object in thus mentioning it, is because it so seldom is found in such a condition. Its appearance proves that it is equally as fine a thing as we have represented it, and also shows what can be done by skilful management.

OPERATIONS FOR JUNE.

It should ever be the aim of all directly and indirectly connected with the carrying out of gardening operations, to insure everything being done with the strictest regard to neatness and order; this is ever requisite, and greatly enhances, when adhered to, the enjoyment sought in pursuing the culture of a garden. But needful as it is at all times to keep this principle in view, it is unusually necessary to do so at the season Nature is wearing her best garments; as at this time of year, and in a season like the one we are experiencing, nothing should be disregarded that conduces to a feeling of satisfaction from this source. It may be further adduced, that what we would here direct attention to is not more valuable as promoting pleasurable enjoyment by its effects, than it is beneficial where practised; whether as regards, in the instance of cultivated plants, their welfare, or that of those existing under less artificial circumstances. We need scarcely allude to the manifold points of management now requiring attention, from the arranging and training of a clump of flowers to the weeding of a walk in the open air; or from supporting the most delicate climber, to ridding a plant of insects in the plant structures.

In the *Orchid* house, flowers and fragrance bountifully reward the culturist; everything, therefore, must be done for their and its preservation, that can be practised without the risk of injuring the plants. A dry atmosphere is most favourable to a long continuance of the bloom of this family, but it can seldom be subjected to it in a house devoted to their culture, without withdrawing from it that humidity necessary at this period. Removing any particular plant or plants to a suitable situation is the only alternative, if their flowers are desired to be preserved; but it is one we are unwilling to resort to, except in especial cases; for not only is the interest of a flowering plant materially lessened by separating it from its family, but also the plant is liable to a check, (particularly if it is circumstanced in the way we allude to for any length of time), which it is most desirable to avoid. It is equally necessary, also, to have an eye to the production of bloom among these plants in its embryo state, as it frequently happens that the pains and watching of a whole season is rendered of no avail by the ravages of some insect, damp, the other extreme, drought, &c. Tow or cotton wool is an excellent material to prevent the attack of various insects, when placed round the flower-stem or the base of a whole plant the embryo flowers of which it may be desirous to preserve. *Stanhopeas* should be regularly attended to, securing to their flower-spikes sufficient room to extend, preserving them from damp by the withholding of water to as great an extent as possible. The management of this family in other respects, such as properly shading, application of moisture, regulating the temperature, *suitably* supporting the various forms of its inflorescence, &c., will continue to require diligent attention. In the stove many plants will need re-shifting; in doing which, regard should be had to the length of time they may be expected to grow, the dimensions it is wished they should attain, &c. Each specimen and individual plant in this structure should now be accommodated with sufficient space to enable it to be quite free of its neighbour; and this, that all may fully perfect their growth. Thinning the shoots, arranging the branches, cutting out superfluous ones, continual attention to training, &c., contribute much towards the same end,—shading, watering, and syringing the plants overhead being duly regarded. A good drenching with the garden engine has a very beneficial effect, when occasionally practised in the stove and greenhouse; and even the *Orchideæ* would be much improved by an occasional saturation. The cleanness, perfect freeness from dust, &c. of the leaves, and their dark-green hue, amply testify to the good effect of a watering of this description. In practising it, care should be taken that a fine day is chosen; and after the operation is gone through, all the air possible should be admitted to dry up any superfluous moisture; and the bloom of any plants must of course not be wetted. The various methods of obtaining a suitable atmosphere in plant-houses, such as casting water on their floors, syringing among the pots and the walls, may be freely resorted to, particularly in clear and bright weather.

Similar treatment to that just recommended for stove plants is equally applicable to greenhouse plants, the difference in the temperature required by each being properly cared for. The flowers of many plants in both erections could be advantageously thinned as they progress to perfection; not only would those remaining be much finer, but the plants themselves would be greatly benefited by being less exhausted than when permitted to bear a profuse bloom. Many of the more delicate greenhouse plants necessarily require to have the number of flowers they perfect confined within certain bounds. Some cultivators do not permit the bloom of their plants to remain till natural decay takes place, but remove it after it has been developed a certain period. Greenhouse plants as they go out of flower should be pruned if it is requisite, previous to commencing their annual growth. No opportunity of giving full air to all plants, wherever it can be admitted to them, should be lost sight of.

The practice of growing various small stove and greenhouse plants in cold frames through the summer season, is not resorted to as much as the advantages attending it justify. It is not generally known that *Melo-Cacti*, &c. flourish well in the structures alluded to, when the weather is of the description ordinarily experienced in summer, and the frames are kept sufficiently close to produce the requisite temperature. Many of the hardier stove plants are greatly benefited by being rendered still hardier, and having their annual growth well matured in the situation we refer to. It is better known how greatly greenhouse plants are improved when they are placed in the cold frames through the summer. Their being so finely under command, thereby enabling proper treatment to be applied with much greater facility than under ordinary circumstances, is not the least advantage attending their being grown where we allude to. It is an excellent plan to plunge the pots of small plants, and large ones too, indeed, in coal ashes, or appropriate material through the summer, whether they be growing in pits and frames or in the open air. The practice is as beneficial, and as effectual in protecting the roots of plants from injury by burning and drought in summer, as it is in shielding them from harm, by frost, in winter.

Propagation of various plants, inmates of the structures above alluded to, must now be thought of ; it is well to begin as early as possible, to have opportunity of making repeated trials in case of ill success. This is particularly the case with those who have not very favourable accommodation for striking cuttings.

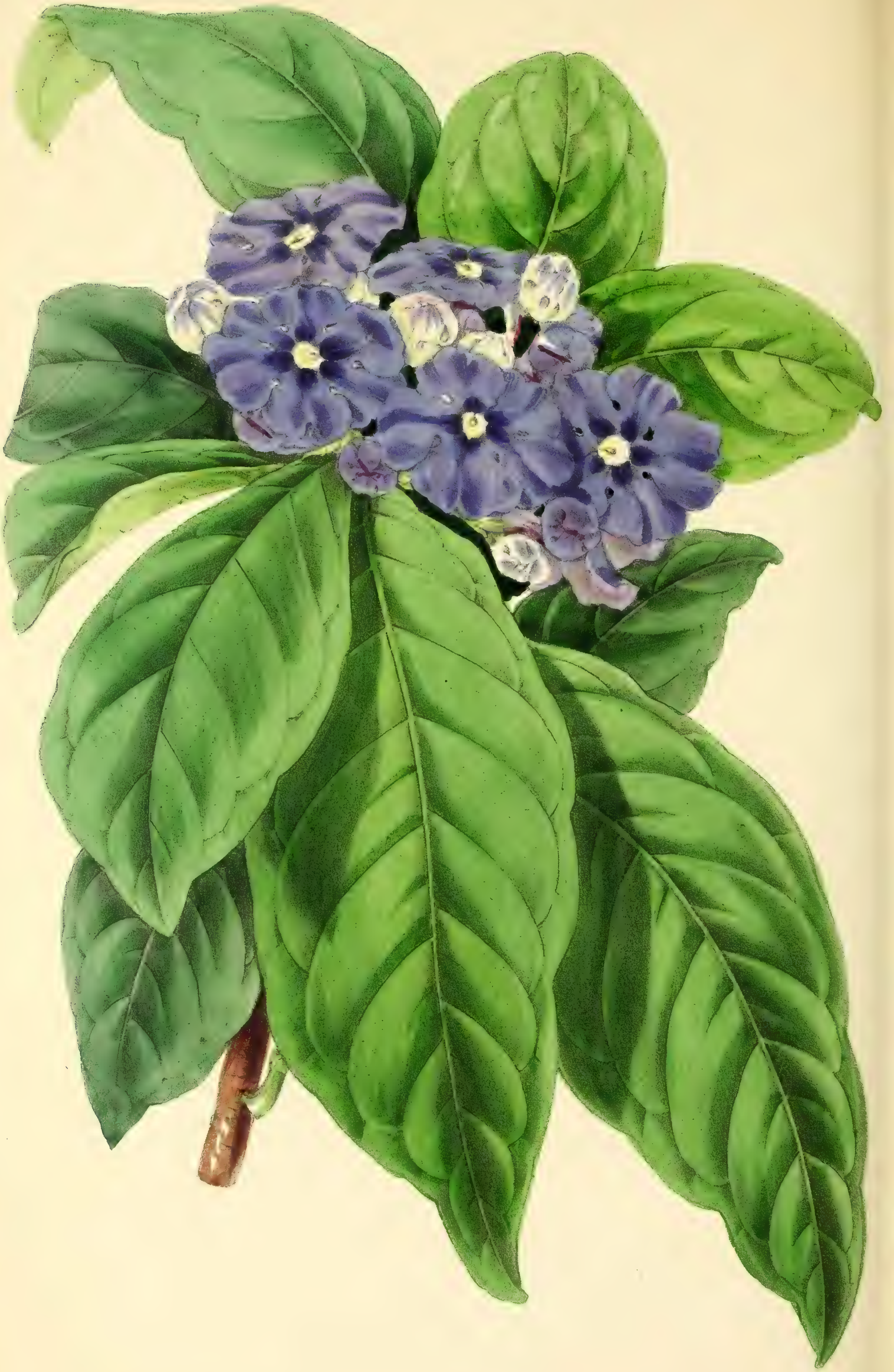
In the flower garden, the principal work is still continuing and completing the turning out of plants ; and aiding those already turned out to become well established. In addition, of course, regarding the necessary tying and training of climbers, and those plants approaching a flowering state ; and others, as their progress renders support by staking, &c. necessary. Laying in, securing, and thinning the shoots of plants growing against conservative and other walls, should have regular attention, as well to increase the fineness of their bloom and general appearance this season as to secure their future welfare.

All bulbs, as they mature, should be lifted, and carefully dried for stowing away. We do not allude to those of valuable kinds only, or such as are required to be removed to make room for other plants, but the whole of bulbous plants, which should be taken up annually, and properly preserved, till the season for planting them in the ground again returns. Such treatment is greatly conducive to their producing fine bloom, and being in other respects luxuriant. The opposite is the consequence of leaving them to grow an indefinite period in one spot. It is not necessary to permit bulbs of any kind to remain in flower beds they may be occupying till their foliage dies off ; they may safely be removed as soon as their bloom has faded, if it is required, and due care is exercised in doing so, by contriving to transport them with large balls of earth, and cautiously replanting them again.

The propagating out-door early-flowering herbaceous plants, such as are valuable, or those it is wished to increase, will require commencing. The most of these will strike freely, if placed in light soil under a north wall and covered with a hand-glass. Layering *Carnations*, and piping *Pinks* that have been forced, must continue to be pursued, to provide plants for a similar purpose another season. *Pinks* about coming into flower should have their blossom-buds thinned, at least those which are considered of importance. *Carnations*, also, which are cultivated in pots, and are valuable for their merit, or from other causes, and indeed all kinds, should be similarly treated, keeping them properly supported. Thinning the bloom-buds of these beautiful flowers should not be delayed too long, for by so doing the fineness of the flowers remaining are lessened, and the whole plant unnecessarily weakened. The calyx of *Carnation* and *Pink* blooms, to prevent their bursting should be assisted to expand by equally dividing the segments. Such operation, if practised in due time, would in great measure prevent the necessity of placing a tie round the calyx to keep the bloom compact.

Roses, and all plants intended for forcing the next season, should be stimulated to grow strongly and form firm wood ; all their flower-buds being removed to assist their doing so.

Any large specimens of evergreens removed late, or at all, and requiring watering, will be much benefited by a mulching of decaying leaves or rotten stable dung. Other trees also, under similar circumstances, would be like benefited, if dealt with in the same way.



Franciscea hydrangeæformis.

FRANCÍSCEA HYDRANGEÆFÓRMIS.

(Hydrangea-like Franciscea.)

Class.
DIDYNAMIA.

Order.
ANGIOSPERMIA.

Natural Order.
SCROPHULARIÀCEÆ.

Generic Character.—See page 27.

Specific Character.—*Plant* an evergreen shrub, stem a little branched. *Leaves* oblong, acute, cuneiform, at the base quite glabrous, yellowish-green beneath, subverticillately aggregate, broad, a foot long; bracteas lanceolate, pilose, ciliated and scale-formed, aggregate. *Cymes* of *flowers* terminal, hemispherical, large. *Calyx* hairy. *Corolla* of a beautiful bluish-violet.—*Don's Gardening and Botany.*

This species is a native of the province of Rio Janeiro, Olava, and other parts of Brazil, where it was originally discovered and specified by Pohl. Mr. Gardner, the "Botanical Magazine" informs us, found it in the Organ Mountains in 1837, from whence he sent seeds that were raised in the Botanic Gardens of Kew and Glasgow, which establishments, doubtless, have since aided in furnishing collections with the plants they now possess.

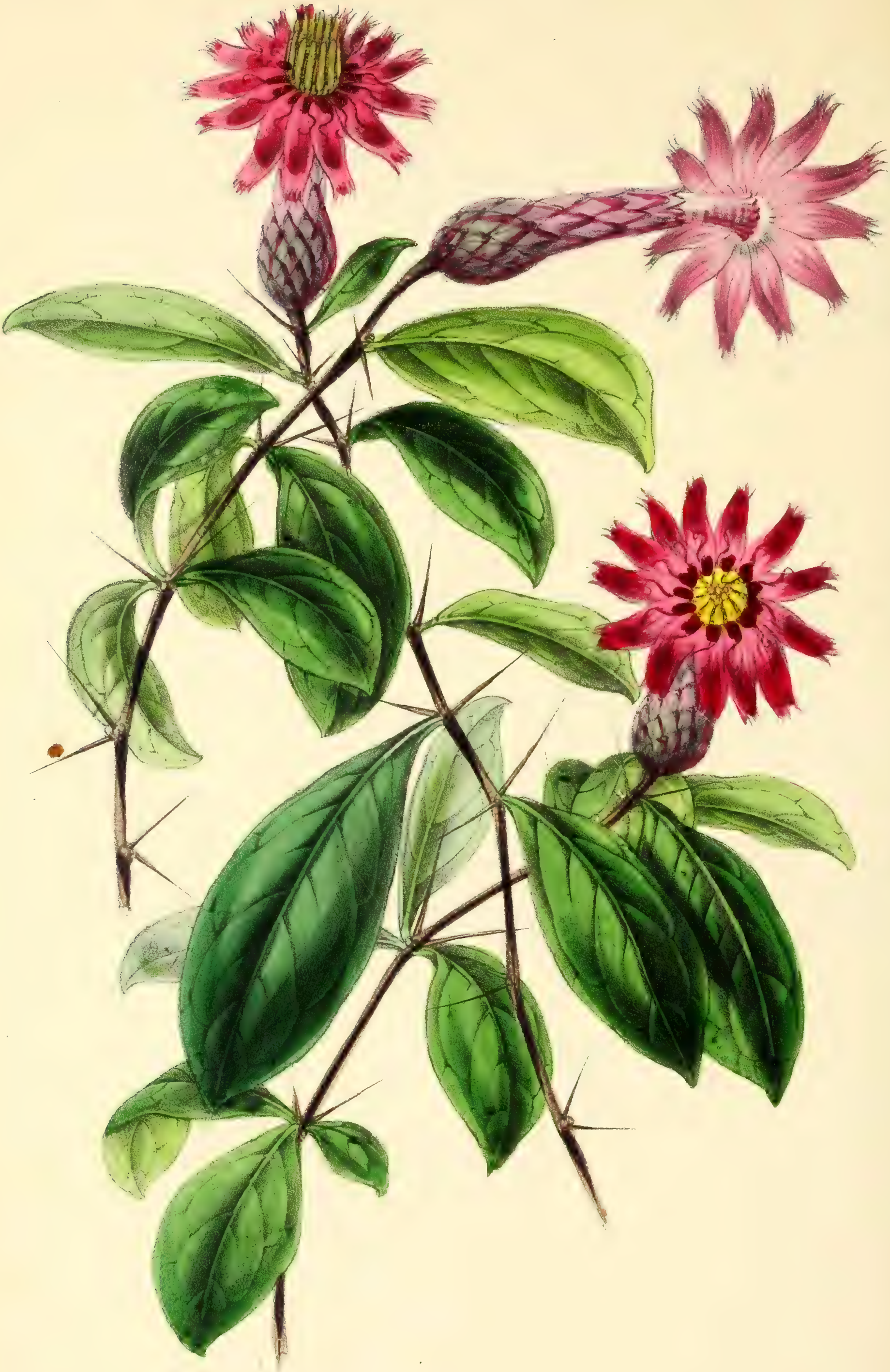
Fine as this stove plant is said to be, it has hitherto had no opportunity of developing the high character given it: though it has sufficiently discovered what it really is. Raised in botanical establishments, in close companionship with thousands of other plants, it is not expected it can have been afforded that accommodation necessary to develop its real excellence. Passing from the establishments referred to into Nurseries, and there undergoing a probation, and propagated with a severity that must impair the energies of the plants,—added to this, the length of time consumed before it reaches the hands of those who have to restore its energies and bring out its true character,—it is no wonder that it is, as are too many of our finest plants, comparatively a long time after their introduction to the country, before they occupy that position their merits ultimately insure to them.

As an ornamental plant it has qualities which will claim for it a welcome admission among all inmates of a stove, possessing as it does the freedom of growth and disposition to bloom of its predecessors, and attaining naturally proportionately small dimensions; its ample foliage, numerous and large heads of bloom, their fine colour when first expanded, and singular property, (in common with other members of the genus,) of changing to one almost opposite, constitute no small recommendation.

It may be propagated similarly, and have the same treatment under cultivation, as other members of the genus, with the exception that its more robust nature will require more liberal management.

This is one of the great number of plants that can be grown (if properly managed and trained) to any, the most engaging shape which most sets off its ornamental character, without the aid of that artificial support which too frequently, by being injudiciously and untastefully employed, detracts from the appearance of many a fine plant. It may be thought we should have chosen a less robust subject, one more evidently requiring the kind of aid to which we allude, to make such a remark upon; but we would remind those who think so, that the less any plant requires artificially supporting, the more insufferable is the appearance of such support when improperly, or, it may be, at all employed.

Our drawing of this fine plant was permitted to be taken at Kew.



S. Holden del. & Lith.

Barnadesia rosea.

BARNADÈSIA RÒSEA.

(Rose-coloured Barnadesia.)

Class.

SYNGENESIA.

Order.

POLYGAMIA ÆQUALIS.

Natural Order.

COMPÒSITÆ.

Generic Character. — *Capitulum* many-flowered, homogamous. *Involucre* turbinate, much imbricated, inner scales radiating. *Receptacle* clothed with slender piliform, spiral, dense paleæ. *Florets* dissimilar, exterior ones biligulate, with a broad, four-toothed lip; interior ones filiform, central ones tubulose, five-toothed, or all bilabiate. Stamens altogether, or the exterior ones only, monadelphous. Achenium turbinate, densely clothed with silky down.

Specific Character.—*Plant* a shrub. *Heads of flowers* solitary, ovately cylindrical, pubescent, sessile. *Florets* with an oblong emarginate lip, villous, sometimes filiform. Central tubular florets wanting. *Filaments* free. *Receptacle* with the hairs not twisted. *Pappus* rigidly plumose.

A very interesting plant, the texture and appearance of whose foliage, and the spines upon its branches, render it somewhat like a *Pereskia*, while the form of its leaves, their number, its style of growth and slender branches, their woody nature, and numerous spines are forcibly reminding of some of the commoner *Berberises*. Its flowers are at once singular and beautiful, from their structure and bright colour.

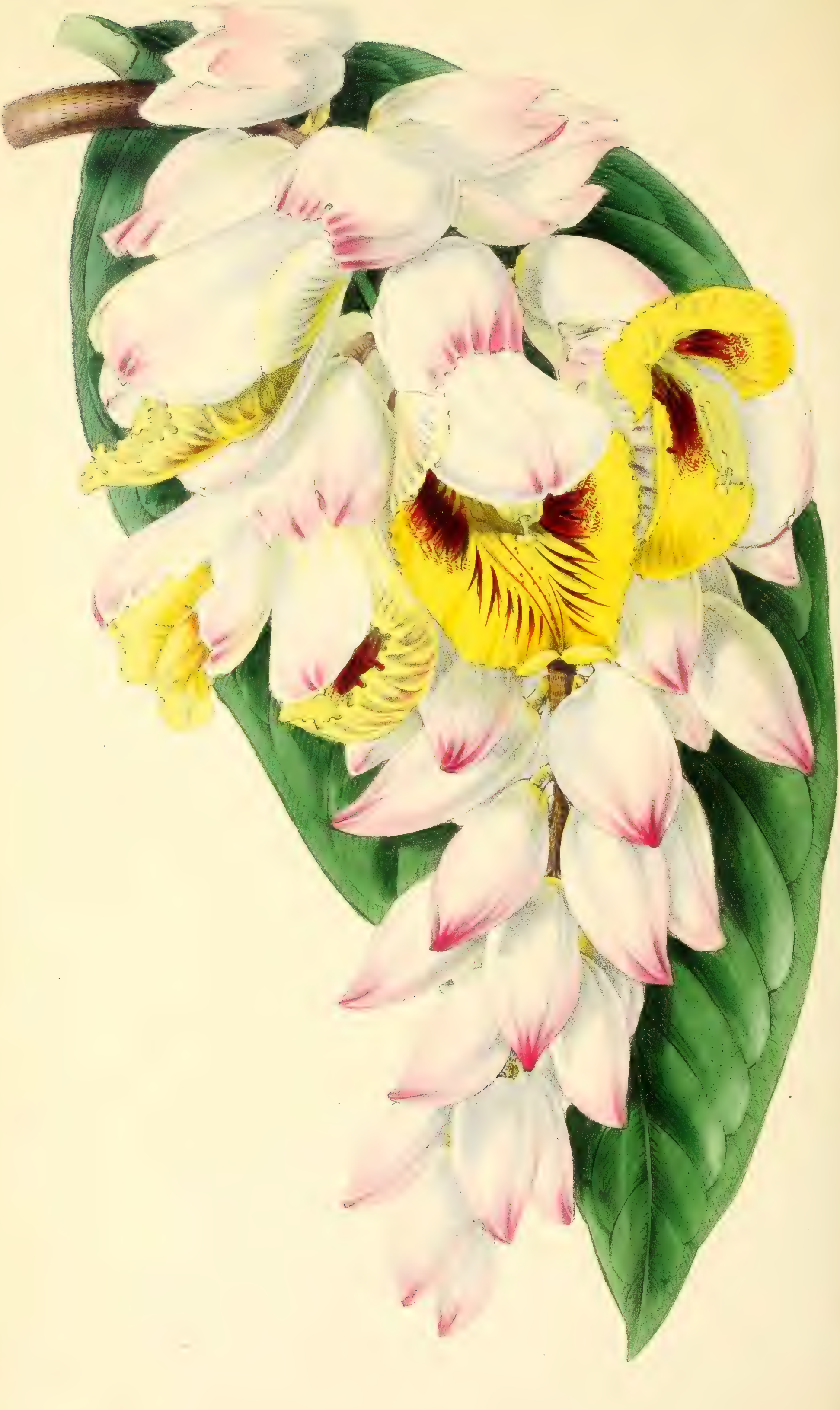
It is the first figured, and perhaps only completely specified member of the genus, which comprises several species, natives of South America. Dr. Lindley is the author of the specific name, which he published, with a figure of the plant, some years since. How, or the period when it was introduced, or the particular locality it inhabits, is not recorded. It first flowered in the collection of the Duke of Northumberland, at Syon. The authority before mentioned thus speaks of its botanical distinctions:—"According to De Candolle, all the species are monadelphous, except *B. laxa*, and in that plant there is a solitary tubular flower in the disk; but here the stamens are not monadelphous, nor is there a solitary tubular flower in the disk; in the place of the latter there is a space which pours forth honey in abundance. It also appears that the hairs of the receptacle are not twisted spirally as in other *Barnadesias*, but are soft and straight."

We have invariably found it indulged with a place in the stove, which perhaps most suits it; but a close greenhouse in the summer months would be sufficient. It deserves considerable attention, for, nicely managed, its appearance will repay the care expended upon its culture. The freedom of its growth, elegant habit, and singular character, so unusual among plants it will require associating with, independent of the beauty of its flowers, which are borne with freedom, solitarily or in pairs, at the ends of the young shoots, and their production in winter and early spring, render it valuable.

Sandy peat or leaf-mould and loam, is the kind of soil it flourishes in. Propagation is easily effected by cuttings.

Our drawing was recently prepared, by the favour of Messrs. Knight and Perry, from plants which flowered in their establishment.

Linnæus gave the generic name in honour of Michael Barnadez, a Spanish botanist.



S. Holden del. & Lith

Alpinia nutans.

ALPÍNIA NÙTANS.

(Nodding-flowered Alpinia.)

Class.
MONANDRIA.

Order.
MONOGYNIA.

Natural Order.
SCITAMÌNEÆ.

Generic Character.—*Anther* double. *Filaments* not elongated beyond the anthers. *Style* the length of the filament, received in the furrows of the anther. *Stigma* obsolete, trigonous. *Capsule* fleshy.

Specific Character.—*Plant* a terrestrial epiphyte. *Leaves* lanceolate. *Nectary* obsolete, three-lobed, folded at the margin. *Capsule* membranaceous, woolly.

Synonymes.—*Renealmia nutans, Zerumbet speciosum, Globba nutans, G. sylvestris.*

We seldom meet with this old and beautiful plant in our stoves, which, though possibly not adapted for universal cultivation, is highly deserving a place in every collection where it could be provided for in a suitable manner, from the great beauty of its flowers. It is a native of the East Indies, from whence it was introduced half a century ago by Sir Joseph Banks.

To be seen truly to advantage, it should be associated with *Hedychiums* and similar genera, and planted out in the stove. Thus treated, and flourishing and flowering, as the last-mentioned genus does in the large Conservatory at Chatsworth, it would be really splendid. Those who see such plants as they are generally grown, have no idea what a fine development of character they exhibit, and what an aspect of tropical luxuriance they become invested with when treated in the manner spoken of. The extent to which they can be so accommodated is not, to be sure, very great, for such erections as the one alluded to are not at present numerous; but the time is approaching when they will neither be few nor far between.

The present species is taken from the genus *Renealmia*, and placed in *Alpinia*, by Mr. Roscoe, in an early volume of the "Linnean Society's Transactions." Our descriptions and the synonymes given are from one of the older volumes of the "Botanical Magazine," which had been indebted for them to the work before mentioned.

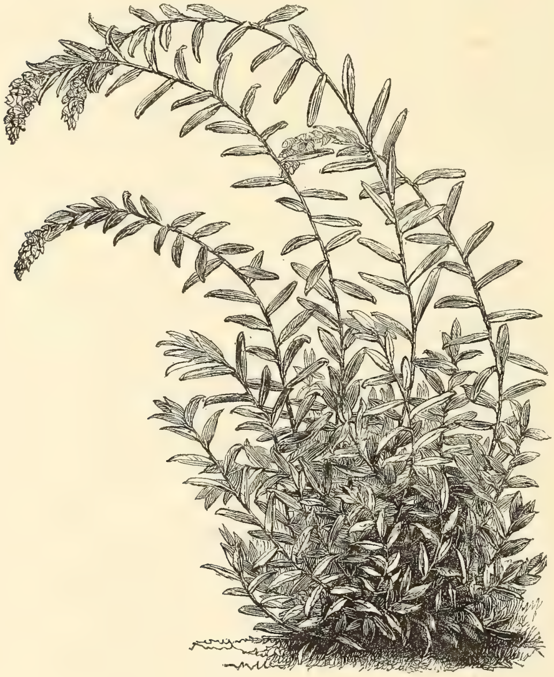
The plant is a perennial, with herbaceous stems, which rise several feet, thickly studded with fine foliage, which is laterally disposed. The leaves are lanceolate, and sheathe the stem with their base. The flowers are borne in a drooping raceme at the summit of the stems, and are produced early in spring.

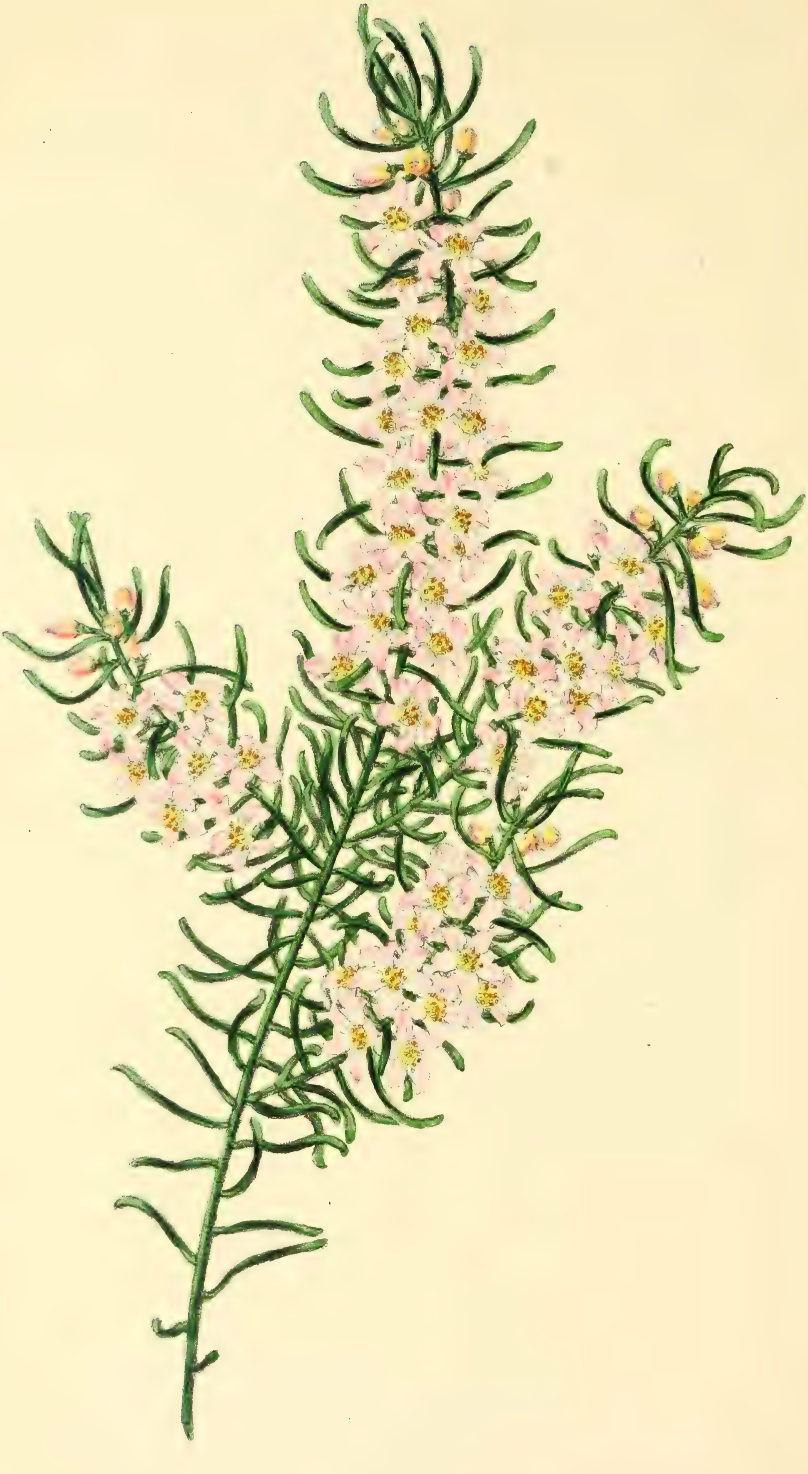
It must not be concluded, from what we have said of the management of *A. nutans*, that it cannot be successfully grown in pots, for it can, and is; as plants have recently come under our observation that were flowering, although they were comparatively small specimens.

Increase is effected by division of the roots. A rich soil, such as good loam and well-decayed manure, incorporated, with ordinary stove-temperature, is required.

We are indebted to R. G. Lorraine, Esq. for the opportunity of preparing our drawing.

The vignette below represents the natural character of the plant.





S. Holden del. & Lith.

Eriostemon scabra.

ERIOSTÈMON SCÀBRUM.

(Rough Eriostemon.)

Class.
DECANDRIA.

Order.
MONOGYNIA.

Natural Order.
RUTÀCEÆ.

GENERIC CHARACTER.—*Calyx* five-parted, permanent. *Petals* five, marcescent as well as the stamens. *Stamens* ten, the five opposite the petals shortest, all shorter than the petals, free, flat, hispid, fringed, tapering to the apex into a thread, which bears the anthers. *Anthers* heart-shaped, appendiculate at the apex. *Style* five-furrowed, very short, hispid or smooth, terminated by a five-furrowed stigma. *Fruit* of five carpels, which are joined together at the base, each containing one, rarely two seeds.—*Don's Gardening and Botany.*

SPECIFIC CHARACTER.—*Plant* a dwarf evergreen shrub. *Leaves* linear, acute, alternate, covered with minute asperities, many-veined, dull green, rather large. *Flowers* axillary; peduncles one, sometimes two-flowered. *Calyx* regular, segments broad, bluntly ovate. *Corolla* polypetalous. *Petals* oblong, whitish, deeply tinged with pink.

THE present, till now unpublished species, is a member of an unassuming but very attractive genus of hardy greenhouse plants. It has long been in the collection of the Messrs. Loddiges, of the Hackney Nursery, who imported seeds from Sidney, New South Wales, many years ago. Like *E. buxifolium*, it flowers long and very freely in spring and summer, and though its flowers are not quite so large, it is superior to that species in being devoid of its stiffness, and rigidly formal appearance, but has not its lively green foliage. In habit it is rather dwarf, branches much, and in a free and elegant manner.

There are many small-leaved, small-flowered plants, and which do not grow naturally to a great size—of which *E. buxifolium* and *scabrum* are instances—that, under cultivation, are grown to and maintained as very large specimens, as though as such they were in a state of greater perfection. But it is an erroneous idea to suppose they are; for, though in age free production of bloom distinguishes them, they have lost that vigour, rude health, fineness of bloom, and robust disposition which constituted their peculiar charm. And more than this, though their flowers are numerous, they are small and enfeebled, both as regards texture and brilliancy of colour. The foliage, too, is produced small and sparingly, and the whole plant wears a debilitated aspect. An occasional specimen of the foregoing description may be, for the sake of variety, advantageously kept, but such will not bear comparison with those that are in the prime of their existence, delighting in rudeness of health and vigour.

The members of the genus *Eriostemon* are very easily grown; the treatment applied to the commonest greenhouse plants being sufficient. Notwithstanding, strict attention to training, and good management in other respects, are by no means thrown away when exercised upon them. Equal portions of sandy peat and fibrous loam, with an admixture of some such material as charcoal, potsherds, &c., form a fine medium for their roots. Propagation by cuttings is not difficult to effect.

The Hackney collection, by the kindness of its proprietors, furnished the subject of our drawing, about twelve months ago. *Eriostemon* is from the Greek words *erion*, woolly; and *stemon*, a stamen; the stamens of the flowers of the genus being remarkable for such a feature.

VEGETABLE ELECTRICITY.

A GREAT deal of mystery is involved in this subject, to which we have adverted occasionally; and in all probability it will be long ere the mind shall be enabled to penetrate the veil that has obscured it. Still, however, the light that has already dawned is considerable, and recent discoveries have been of a nature and importance which must furnish a stimulus to more energetic researches.

The late attempts to introduce electro-culture upon the farm, though attended only by negative results, have not been useless; this we shall attempt to prove by an appeal to a treatise which has recently appeared in the *Edinburgh Journal of Agriculture;* but previously, will take a retrospective view of the theory of a French philosopher, that appears to have been almost forgotten.

In the years 1826-7, and 8, M. Dutrochet, correspondent of the Institute of Paris, undertook to investigate the peculiar motion of the fluids in the leaf of the greater Celandine, which had been observed by M. Schultz, of Berlin, who satisfied himself "that he saw two distinct currents, one *ascending*, the other *descending*." M. Dutrochet soon after published four papers, the first entitled, "*L'agent immediat du mouvement vital, dévoilé dans sa nature, et dans sa mode d'action, chez les vegetaux et chez les animaux*." The author gave it as his opinion, that "the motions of fluids in plants depends upon two currents of electricity, setting with very unequal force between the denser fluid of the tree and the lighter fluid of the soil; the more powerful current setting from the soil to the tree, and so producing absorption, by conveying aqueous particles into the roots through the vegetable membrane called the epidermis." Notwithstanding his own ingenious and almost conclusive experiments, concordant in their results with others which are produced by voltaic action, M. Dutrochet relinquished his theory: but since the publication of Dr. Faraday's *Researches*, and more recent magneto-electrical experiments, the evidence of a predominant, all-pervading electric agency, becomes undeniable; and it will not be long before the philosopher will claim it as his only interpreter of all the leading phenomena of vegetable and animal nature.

When M. Dutrochet made his experiments, there were few professional men, or philosophers, who were at all prepared to admit the agency of this elementary matter in the phenomena of vegetable life and nutrition; hence the mathematician would be inclined to refer to the pure science of numbers and calculation any natural phenomenon, rather than to an agency which could not, in the then state of knowledge, be discovered, or traced by any of the senses; and this appears to have been the case with M. Dutrochet. Still, there were minds which penetrated the mysteries of truth, by the aid of analogical evidence, and boldly announced their opinions.

Thus in 1827 a writer, under the initials T. P., called the attention of the cultivator to the following facts, which, though little attended to, were palpable, and not to be impugned. "Vegetables," he observed, "abound in pointed terminations communicating with juices passing through capillary tubes, and possessing strong conducting virtues, all of which circumstances must concur to adapt them for imbibing electric effluvium, and diffusing it through their substance. The facts of the constant positive electricity of the atmosphere, and the adaptation of vegetables to imbibe it, seem necessarily to lead to the inference that they are continually acting in this manner upon the atmosphere. But the inference is strongly confirmed by applying *vegetable points* to the cylinder or prime conductor of an electrical machine. Even a thorn or a thistle will vie with, if not excel, the sharpest needle in this property; and it may be observed, that they are far better fitted to act upon the electricity of the atmosphere, as *the deposition of moisture consequent to the withdrawing of the effluvium which holds it in a state of vapour*, so far from diminishing their conducting virtue, as in the case of metals, is the very principle of their nutrition; so that there is reason to conclude, that the action of every point furnishes it at once with the means of its vitality, and its growth and maturation.

A *few blades of grass* held towards the knob of a charged jar, the circuit being completed by the human body, will silently but quickly effect its discharge. This admirable adaptation of an atmosphere, constantly containing electric effluvium, to a system of vegetation, presenting strong conducting points at every extremity, in connection with the capillary tubes capable of imbibing and transmitting it through their juices to every part of its substance, forcibly indicates their mutual utility and dependence."

Nothing can afford stronger proof of electric action on vegetation than the existence of *points*, which are found, by actual experiment, to attract and conduct away the fluid excited by the common electrifying machine; but there is another consideration which ought to be taken into the account, and that is, the decomposition of all those substances within the soil which we call manures. It is plain to every one at all familiar with electro-chemistry, that not a particle of any organic matter can be *resolved into its elements* without the agency of powerful disturbing forces; and, as a curious coincidence, it has been clearly shown by the experiments of organic chemistry—which, thanks to Liebig, have become the order of the day—that, in the vegetable "organism," all the specific, peculiar products of each combine their elements in a manner totally at variance with that of ordinary chemical arrangement. In the latter, the *inorganic* constituents combine in certain and definite proportions; either simply, as unity with unity, that is as one equivalent of acid, with one of its alkaline base; or, if not restricted to one, yet always in some multiple proportion of that equivalent; thus, "the same chemical compound invariably contains the same elements in unvarying proportions." But in *organic* chemistry, the *elements* of gum, sugar, oils, essences, balsams, vegetable acids, are not so arranged. *Those* are, indeed, but three or four in number; yet they combine in a way, and to an extent, altogether complicated and extraordinary. When we contemplate the agency by which these infinitely diversified combinations are produced, and ascertain it to be *the light of the sun*—the vivifying principle of Nature, the assured source and fountain of electricity and magnetism, and, as a natural consequence, of that effect which we term *heat*—little doubt can remain of the relationship which exists between electricity and vegetation, or that the latter and all its productions are excited and governed by it.

We now claim attention to a paper of extraordinary merit, which forms the second article in the last number of the "Journal of Agriculture," (*March*, 1846,) "*On the Electro-culture of Farm Crops*," by that eminent Electrician, Mr. William Sturgeon, Editor of the "Annals of Electricity, Magnetism, and Chemistry," &c., &c., &c. It does not, in reality, apply to farm-crops alone ; but being written for an agricultural work, and Electro-culture having, during the previous year, become a prominent subject, the writer consistently addressed himself chiefly to agriculturists. But the few extracts which our limits permit us now to offer will evince that the principles of the article apply to every vegetable production, useful or ornamental.

Our Author appears to take as his foundation the great principle (which a variety of experiments, familiar to electricians, have demonstrably established) that "the *particles of electric fluid are repellent of each other*, a property which finds its analogue in all aërial fluids; hence it is said, with propriety, that the electric fluid is elastic, and that bodies *similarly* electrified *repel* each other. From the results of another class of experiments we infer, that bodies in *different* electric conditions *attract* each other; and as no facts are known to contravene this inference, it has become an established principle in electric science. Upon these attractions and repulsions the doctrine of electro-chemistry is essentially based; and to those principles alone are chemical changes due. The elements of compounds have only to be assailed by electric forces more powerful than those which hold them together, and decomposition is a certain result; and bodies which will not associate with each other under ordinary electric circumstances, can easily be forced into combination by the aid of additional forces properly applied.

"Contemplations on electro-chemical forces, thus disencumbered of complexity, are well calculated to afford a clue to those atomic operations which select the appropriate materials, convey them to their destination, and elaborate them in the structure of every vegetable tissue that is formed within and upon the surface of the land."

The second great position assumed by Mr. Sturgeon is *Electro-polarity*, occasioned by electric disturbance. Such is the condition of the prime conductor of a common machine when at work. "Now," he observes, "as this is a universal law when electric fluid is transmitted from one body or object to another, it follows that the *electro-polar* state of the air contiguous to growing plants causes the latter to become *electro-polar*, even when they are in the act of transmitting fluid to the ground, their upper parts being negative relatively to the roots, while the latter, in their turn, are positive to the contiguous manure and soil, to which they deliver up the fluid (or rather, such portions of it as are not retained for the expansion and growth of the plants) as faithfully as the leaves and stems receive it from the air."

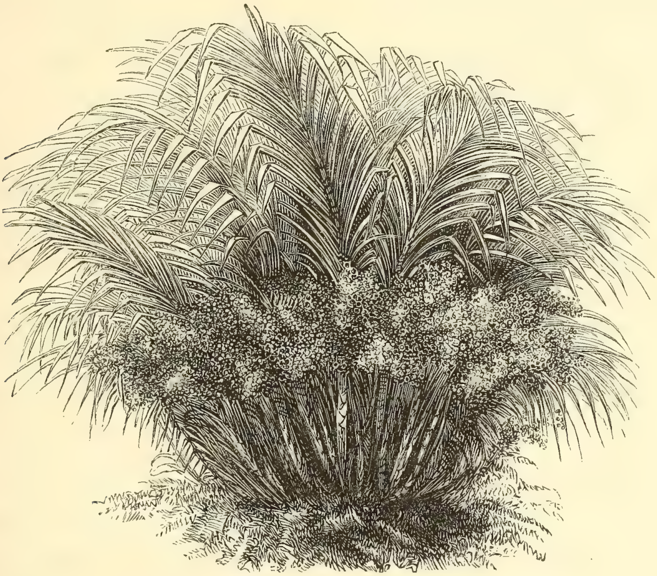
"From this train of reasoning we are led to some of the most interesting facts in vegetable physiology. The electro-polar condition of plants qualifies them in an eminent degree for the performance of those operations which develop electro-chemical phenomena; and what is very remarkable, the laws of this beautiful branch of electricity are rigidly enforced, and admirably complied with, in the decomposition of carbonic acid gas by their foliage; for, in this process, the electro-positive carbon is drawn to the electro-negative poles of the plants, in precisely the same manner as any electro-negative pole artificially made would release the carbon from the oxygen, and select it in preference. This remarkable fact, firmly based as it is in the strict principles of electrical action, not only establishes a correct view of the *modus operandi* by which plants are enabled to acquire food through the instrumentality of their foliage, but appears to me well calculated to give a clue to every operation by which vegetables become nourished, and elaborate their food in all the variety of structure they so abundantly and beautifully assume."

Here we are constrained to quit Mr. Sturgeon's Essay, which, however, must be resumed in our next, as space is not now at command to do justice to it, or its most interesting subject. On that future occasion it will be made to appear that electro-culture is equally applicable to the flower-bed, the parterre, and the conservatory, as to the open fields of the farm.

In the meantime, it should seem that Mr. Sturgeon has embodied in the thirty-seven pages which his article embraces, all that a philosophic and zealous electrician could collect, in the present state of our knowledge. Avoiding theory, he has adduced and relied upon evidential facts; and so far, he does honour to his science. But there are minds which see that "the end is not yet," and therefore hail "the great hereafter." By isolating electricity, we convey a false idea of its nature and properties. But when we refer it to the sun, and conceive that in its beams a something that overwhelms thought, a spiritual elementary essence, is conveyed to all nature, and fills every atomic particle with itself; conferring upon *the whole*, as upon every individual, *all* that constitutes the means and causes of what we term *attraction* and *repulsion*—in a word, all that holds nature, in its integral whole, or in its minutest parts, together, while it provides for an incessant disturbance, change, and interchange of position,—we acquire a feeling, at least, if not a demonstrative assurance, of an agency which could account for every phenomena in material creation. A mind so constituted (while inwardly convinced) is, of all others, the least disposed to dogmatise—it is, on the contrary, only confident in hope; and, viewing the slow but sure advances in discovery, it only ventures to announce that the day is not remote when the terms negative and positive, vitreous and resinous, attraction and repulsion, so far as they are now applied to our electricity, magnetism, and chemistry, shall be all and severally merged in one grand theory of *Solar Induction*, simplifying every principle, and uniting indissolubly every link in the grand chain of causes and effects.

CYRTOPODIUM PUNCTATUM.

Those of our readers who were fortunate enough to see the splendid *Orchid* which is the subject of this notice, as it appeared at the first Chiswick exhibition of this season, will be glad to find we are thus noticing it. And those who did not see it, will be able from our description, and the accompanying vignette, to learn what a striking example of skilful cultivation, and truly noble object it was.



To convey an idea of its general appearance we cannot do better than employ the truthful remark of a noble personage who beheld it at the exhibition mentioned. It was remarked to be a "*Palm* with *Orchidaceous* flowers," and certainly such a comparison was no fanciful one, for the large stem-like pseudo-bulbs, rising from five to six feet from the surface of the tub in which they grew, and furnished on their upper portion with long lanceolate foliage, each leaf stretching longitudinally from two opposite sides of the stem, the lower ones from eighteen inches to two feet in length, the others gradually diminishing in length to the summit of the stem, formed in their general outline what might be justly compared to the fan-like leaves of some of the large *Palms*.

The plant consisted of eight or nine of the large stems above described, which had grown in an irregular circle six feet in diameter, within which remained the pseudo-bulbous stems without foliage, the growth of previous years, marking by their various degrees of strength, the increase in luxuriance the plant had successively attained. These stems composed the centre of the plant, but were almost hidden by the luxuriant large leaf-bearing ones. Without these latter, from their base, and immediately under shelter of their foliage, describing a still larger circle, rose the inflorescence, three to four feet high; its form was a branching panicle, supported on the upper part of a strong stem; its figure an irregular triangle whose sides were about eighteen inches. The flowers, individually, are naturally smaller than it may be imagined such a plant would produce, and their colour, though not of a bright nature, was gay; the sepals and petals having a yellowish-green ground, spotted with brownish-crimson. The lip formed a miniature representation of that of *Oncidium papilio*. The whole of the several portions of vegetation described, grew from a centre not more than a foot in diameter, occupying a tub about two foot across, and thirty inches to three feet deep. The plant growing naturally in the order stated, and having no more support, arrangement, or training, than was necessary to prevent injury to the inflorescence, which from the innumerable quantity of blossoms, the luxurious manner the short ramifications of the panicle which bore them clustered together, the light colours, aided by large bracts similarly marked, and the healthy foliage, constituted a most superb specimen. The young annual growth had arisen nearly to the same height as the flower stems, and was strong and promising.

The fineness of the plant of which we write, was due in a greater measure to superior cultivation than may be imagined; for instance, fancy the fine foliage which principally gave it so noble an aspect not to have been present, to have been dead or partially so, the plant would have been immeasurably less fine in appearance. Now, under ordinary cultivation, the leaves of *Cyrtopodiums* and the present species also, begin to decay as soon as the pseudo-bulbs are perfected. Hence, except when flowering, they are usually uninteresting, if not unsightly objects.

The plant in question is the property of Sir George Staunton, Leigh Park, Havant. Mr. Scott, that gentleman's gardener, under whose skilful management it was brought to the state of perfection it exhibited, informs us that it was especially treated with a view to prevent its losing its foliage, and which was effected by not suffering it to get too dry, or completely rest a long period in winter. It was, Mr. S. acquainted us, purchased five years ago at the Messrs. Loddiges' establishment, a small plant, and that it has been kept in a moist stove, the temperature of which, in summer, ranged from 80 to 90 degrees, and in winter from 60 to 65 degrees, that the soil it has been grown in is sandy, turfy peat, used in a rough state, mixed with *sphagnum* moss.

The genus Cyrtopodium, according to the Messrs. Loddiges' Catalogue, is rather extensive; though few species are yet described. They are chiefly natives of Africa, and South America. Our present subject is of rather modern introduction, and is a native of Brazil. Those already known are not strikingly distinct from each other.

The great interest with which our plant was regarded, and the admiration it drew forth at the meeting it was exhibited at, is a proof of the tendency such subjects have to give a zest to the increasing taste for Horticultural pursuits, and drawing attention more extensively to the great and deeply important department of Natural History, the Vegetable Kingdom. The *Orchidaceous* family, indeed, from its very extraordinary character, peculiarly tends to what we allude, no better evidence of which is, the wide extent to which it is now grown, and the perfection its members are brought to by cultivation.

Noble as the *Cyrtopodium* we have been describing appeared, it was not seen to the greatest advantage, in consequence of its standing on the ground. It would have appeared far larger, and more noble, if it had been elevated a foot or fifteen inches, which we understood it would have been, had it not been very late in the morning when it was brought to its position.

PRUNING AND TRAINING.

The operations of which the above simple terms are the names, are as familiar to every one at all acquainted with any description of gardening occupation as the terms themselves, that is, as far as "pruning and training" being practised to a certain extent, and for certain purposes, are concerned. But, beyond this, in a general view of the case, or as at all, according to its importance, it is very rarely practised, and therefore cannot be, in a wide sense of the expression, sufficiently understood. Believing this, assured it is indisputable, we shall proceed to deal with the subject in a manner that will render it suitable, and we feel convinced, acceptable in our pages.

We are principally and too much acquainted with "pruning and training" as part of a course of treatment; recommendations to have recourse to it, instructions as to its objects, utility, &c., and directions for the mode of proceeding to carry it out, too invariably treat it as though it was a thing of secondary importance, which indeed, under certain circumstances, it does become. With one or two worthy exceptions, but in those the views of the subject confined to certain limits, we have never met with the practice under consideration dealt with as embodying a great principle, the proper application of which is capable of producing various important results, developing themselves under profitable, politic, highly gratifying, and enchanting aspects. With the two first we have necessarily nothing to do here. "Pruning and training," as it relates to the production of superior timber, or induces a tree to provide gratifying shade for the sweltering Deer and heated Ox, as it creates the disposition to produce the melting peach and juicy grape, does not come within our province. Our present business with "pruning and training" has little concern beyond the production of ornamental effect, a consideration of it as it applies to which, it must be admitted, embraces a very wide field indeed; and though it is our intention to keep within certain limits, we may be tempted to range in a manner that will appear contradictory to our stated purpose.

In searching for a point on which to seize, in order to illustrate the comprehensive view we take of the subject, we start by imagining we are pursuing our course among some picturesque scene, and fall in with, in an unsheltered barren situation, a stunted-branched *Oak* or deformed *Pine* heightening the character of the scene, and according with all surrounding objects ; to change which would be an act of folly—to attempt to do so a still greater. This imaginary case is instanced as an extreme one, in which every attempt to effect any good by "pruning and training" would be fruitless. The natural circumstances of the situation so completely operates to nullify its influence, that except it were changed, or exceedingly modified, it were unreasonable to expect the least approach to a favourable result. It is not admitted that by no possible agency could such an order of things be established as would permit, and even facilitate the valuableness of "pruning and training" being evident, if not to its fullest extent, at least in degree.

Having given the foregoing as the extreme of circumstances under which we consider the practice of the operations in question would be of no avail, but to a near approach of which we are quite satisfied they may be profitably employed, we will proceed to trace down and bring forward instances where "pruning and training" may be practised, and be highly beneficial. We walk into the wide-stretching acres of a noble park, and approach a faultless specimen of *Horse-Chesnut*, *Sycamore*, *Ash*, *Oak*, or any of the hardy genera; we say a faultless specimen, because the most symmetrical proportions, the most perfect development of every part is there exhibited. It extends, and may be sweeps the ground on all sides with its perfect ramifications; our only regret in reference to such a monument of perfection is, that it is not in a wood of others of similar age and dimensions, but is there alone in its beauty and perfect completeness. And it is not because there are no others, that timely pruning and training could not have rendered them all such. None may have been practised upon it, but it happened to grow handsome when young, its several parts being nicely balanced, and nothing intervened to destroy such balance; consequently it attained maturity, developing continually the same handsome features. Now, a large and aged tree is beautiful whatever be its shape; it enlists our veneration from the moment we behold it; its time-worn branches call forth the best feelings of our nature. How much more an object of admiration is it when it combines beauty with age—the great beauty we have above described ! To change the scene, and feast our vision upon a finely formed *Willow*, or drooping *Birch*, as their branches dip to the reposing lake, or ripple the passing waters of a gentle stream, by whose sides they may be flourishing. How expansive is their proportions, what an extensive and well-filled outline do they describe, so conspicuous, arising or expanding among the scraggy forms by which they are surrounded; and yet they may have received no aid from "pruning and training," in unfolding the inherent beauty their charming forms exhibit; but the want of it in the younger stages of their neighbour's growth is mournfully evident now. Again, we come upon a towering *Spruce Fir*, a perfect pyramid of evergreen vegetation, whose lower branches have long made the ground their resting-places, rising again and spreading in the vigour of their growth, and rendering more strong what appears the basement of so grand a superstructure.

This last description brings us nearer home, brings us to look upon one of the same natural family, the *Cedar of Lebanon*, in all its grandeur; and those only who have seen a member of this noble genus aged, large, and completely perfect as a specimen, can appreciate its magnificence. Here we stop to remark, that no tree is more profited by pruning, the effects of which are brought out by accompanying and judicious training; and none earlier, in a small state, or more lastingly exhibit the good effects of what we refer to. Neither do any require an earlier or continued application of the practice than the *Cedar of Lebanon;* for it is a simple truth that where one large, really well-proportioned, handsome specimen is met with, twenty that are ungainly, if not deformed, are found,—and yet such are objects of admiration almost universally, though not on account of their beauty.

The conclusion of the foregoing paragraph having brought us to the ample lawn or extensive pleasure-ground, to which the *Cedar of Lebanon* is too frequently confined, we will examine these in the case of the stately *Beech* or fragrant *Lime*, our favourite *Thorn*, and ancient *Portugal Laurel;* the flowering *Acacia*, the modest *Yew*, a graceful red or white *Cedar*, or even the lowly *Savine*, and scores of others,—not whether pruning and training in their case would have been beneficial, for we will imagine them as perfect as need be: but whether half-a-dozen, a score, or an unlimited number of equally beautiful objects occupying the sites of those that do not come up to our standard, would not, we say, at least be as acceptable as the solitary one or two which exist, or those we would replace. To show that what we have in view is universal in its application, we need only remark that the garden whose extent could only accommodate half-a-dozen or a pair of shrubs or trees, as objects of ornament, as well as that of the cottage which possesses the solitary *Holly* or *Box*, and the orchard of half-a-dozen fruit-trees, might as well have them uniformly handsome, and their beauty as well as utility developed, as in the case of the latter possessing straggling wretched objects, and the preceding cut into conical arbours, or tiers of balls, and trained bows and crosses, which are much more difficult to produce.

Having seen the extent to which subjects exist, which pruning and training, as operations to create ornamental effect, can be practised upon, and described specimens that were by accident examples of what "pruning and training" would with certainty effect, we glance at the proper manner of carrying it out.

Now, no one will deny that every tree of whatsoever kind possesses, in different degrees, according to its nature, the inherent capability of growing to a very ornamental object. In other words, no trees or shrubs from choice, so to speak, grow in an ugly form; it is not its own fault that it does so, but the fault of circumstances; so that the actual work of "pruning and training" is the proper direction of a power capable of being developed in a gratifying manner, and inherently disposed to do so, but which disposition is rendered powerless by circumstances. To be effectual, the practice should be commenced upon a subject as early as there is vegetation whereon to operate, and continually carried out; this done, in the case of hardy rare shrubs and trees, or any intended for ornamental effect, till the one or many individuals are placed in their final position, and afterwards until such have become completely established, would be doing the main part of what is required; for, by that time, the general form would be developed, and a proper balance of vigour and regularity in its parts being once created, little after care would insure its maintenance.

The summer season is the best for the practice of "pruning and training;" the operation carried on then, though it is not alone the period when it should be attended to, is far more effectual than in the generally understood—as proper alone—period, the winter. The whole energy of any plant or tree is then in an acting, working condition, completely under control. As a proof of this fact, witness the proceedings of the Prize *Gooseberry* grower, and the result of his exertions in giant fruit. The manager of the *Vine* and *Peach*, and the fineness of the fruit, is another example. The principle of pruning and training is exactly the same when applied in reference to producing an ornamental tree, as in the case of the fruit. For instance, we can as easily direct its energy to increase the strength of a weakly branch here, or to produce a shoot there, as the *Grape* and *Gooseberry* grower directs that which goes to the increase of their fruit into channels for that purpose.

By pruning and training we wish to effect something more than prevent, in the case of an ornamental subject, one portion—it may be a single branch of a tree—striking in a direct longitudinal manner from its side, or assuming the character of a second leader, or any other position, absorbing the whole energy of the plant to its own uncouth increase, presenting the unkind spectacle of the evident robbery of its junior, weakly associates, all members of one common parent. But as we have already stated, to be of service it must be practised in and through all the stages of the young plant's growth. We cannot render an aged, ill-formed tree, handsome, or very little, if any more ornamental, than it is as it has naturally grown. In descending to examine at what age or size the practice of "pruning and training" ceases to be effectual, or of any service, the kind, extent to which it requires doing, &c., must be taken into consideration. We may, however, state that, though in some instances it may be better to prune later than not at all, no amount of after care will compensate for its early neglect.

Farther upon this, as regards the general subject, we have little to say, we may add, however, lest it should be argued that by so extensive a system of "pruning and training," a monotonous and too uniform effect would be produced; which is a consequence that need not at all ensue, because, even with the same species, one unvarying form of object need not be set up as a standard and followed. And besides, the pruning and training we treat of is intended to remove obstacles in the way of a uniform development of vegetation, to establish a proper proportion between all its parts, and not to confine it to a certain outline of figure; for though we may rigidly prune and train two plants of the same species, it does not necessarily follow they are to be exactly of the same shape. And again, we do not expect to obtain the beauties of contrast, by employing several plants or trees of one species, but seek it in different species of a genus, and different genera.

Up to this point we have considered "pruning and training" by itself, as to what it is capable of alone. In carrying it out it should always be thus considered: what it is able to effect would then be much more likely to be attained. It is secondary only to insuring a plant such provisions for its roots, as from its nature will cause and encourage it to grow, which of course lays out the foundation of all success, and any fineness it may attain; and "pruning and training," is dependent upon it, inasmuch as, without something on which to operate, it is not expected to prove its nature, much more to produce any result.

We have said nothing of the principle we have been dealing with, as it relates to plants cultivated in pots. It is practised to a much greater extent upon them than things of a hardy description, as it is not only better understood, but its effects are more palpably evident. It is, however, here, far from experiencing that universal application it ought and will, as the better knowledge of plant culture, confined within circumscribed limits now, is farther extended. As it is in the hands of every culturist, it is practised to some extent, though very seldom to so great a degree, at the time, or in the manner it ought.

In this lengthy paper it is conceded at once we have employed language more figurative than we are wont, but offer no apology for having done so, if we are at all successful, by so doing, in directing attention to the subject more in its extent.

FLORICULTURAL NOTICES.

NEW OR BEAUTIFUL PLANTS FIGURED IN THE LEADING BOTANICAL PERIODICALS FOR JUNE.

AN′SELLIA AFRICA′NA. Dr. Lindley wrote of this plant in 1844, as follows:—"While we are writing on this subject, we would also mention another most noble plant, specimens of which might certainly be procured by any of our African merchants. When Mr. Ansell was ill from the effects of the Niger expedition, at Fernando Po, he found in Clarence Coxe, growing on the stems of the Oil Palm (*Elais guianensis*) an epiphyte with a slender-jointed stem about two feet long, having at the upper end many stiff, plaited lanceolate, five-ribbed leaves, and a terminal panicle of flowers as large as those of *Vanda Roxburghii*, with dark purple spots on a pale ground. Of that plant we possess a dried specimen, with one of the lower branches of the panicle in good preservation, and as it proves to be a new genus, we take this opportunity of naming it after its discoverer." The Rev. John Clowes, and the Messrs. Loddiges, have received, since the above was written, this truly fine *Orchid*. The latter gentlemen flowered, in the beginning of the year, the plant the subject of the present notice. *Bot. Reg.*, 30.

ÆSCHINA′NTHUS PURPURA′SCENS. *Æschinanthus albida, Bignonia, albida, Trichosporum albidum, and Lysionotus albidus* are recorded by Sir W. J. Hooker as synonymes of this plant "It is a species readily distinguished from the rest of the genus by its sinuate-toothed leaves, by the dark purple-brown prominent midrib on the under side, by the long, purple, subulate laciniæ of the calyx, the green corolla, having its limb spotted with dark purple or blood-colour, and its ciliated or fringed margin. It has recently been introduced to our own stoves by Mr. Veitch, through his collector, Mr. William Lobb, from Java. It inhabits the mountains. It is a free and abundant flowerer, and blossoms in March, and loves heat and moisture." *Bot. Mag.*, 4236.

Bouva′rdia fla′va. "The little greenhouse plant now figured," Dr. Lindley observes, "was introduced into this country by M. Van Houtte, Nurseryman, Ghent, and is mentioned in his Hortus as having been published by M. Decaisne, in the Flora. It appears to be very distinct from all the species previously described, and is, we presume, a native of Mexico. That, however, is not stated by the anonymous author of the 'Hortus Van Houtteanus;' in which work the leaves are said to be speckled with purple, a circumstance that has not come under our observation. The flowers, however, are a clear, pure yellow, and droop gracefully from their slender purple "footstalks." *Bot. Reg.*, 32.

Cypripe′dium barba′tum. "It is with no small reluctance," states Sir William Hooker, "that I represent this as a species distinct from *Cypripedium venustum*, Wall, *in* Bot. Mag. t. 2129, and Exot. Fl. t. 35, or even from the *C. purpuratum*, Lindl. Bot. Reg. t. 1991, the only distinguishing character being in the 'purple hairy shining warts which border the upper edge of the petals' in our present plant. But assuredly such warts, in a greater or less degree, do exist on those of *C. venustum*, though they are obsolete in *C. purpuratum*. Probably the different localities were considered to strengthen the idea of specific difference, the *C. venustum* inhabiting the north of India, about Nepal, and the two others the Malayan Islands: but the mountains of tropical India are now well known to produce similar species to those of the less elevated regions of the north, and such appears to be the case in the present instance. The colour of the lip in *C. barbatum* is different from that of *C. venustum;* but in two beautiful flowering specimens sent to us by our friend Mr. Veitch, from Java (from which our figure was taken), one exhibited the dark purple of *C. barbatum*, the other the pale colour of *C. venustum*. The leaves, in like manner, vary in intensity of colour and marking, and in the absence or presence of brown dots on the under side of the foliage." *C. Javanicum* is a synonyme. *Bot. Mag.*, 4234. [The two *Cypripediums* above referred to are those noticed at page 71 of our present volume.]

Cirrhope′talum thoua′rsii. *Epidendrum umbellatum, Bolbophyllum longiflorum, Zygoglossum umbellatum, Cymbidium umbellatum.* "For the illustration of this exceedingly curious *Orchideous* plant," writes Sir W. Hooker, "we are indebted to Dr. Lindley, who observes that the species inhabits the Society Islands, Java, the Isles of France and Madagascar, and Manilla. It requires a little dissection, and the removal of the long lateral sepals, to distinguish the beauty and the elegant marking of its flower. The generic name was given by Dr. Lindley, from the prevailing tawny colour of the blossoms, as exhibited chiefly in the sepals: *κιῤῥος*, tawny, and *πεταλον*. The plant requires heat and moisture to bring it to perfection, and it then seems to flower at various seasons of the year. Our figure was made at the Royal Gardens, in December, 1845." *Bot. Mag.*, 4237.

Callia′ndra Ha′rrisii. "A very handsome stove plant, of straggling habit, but, if supported by sticks, easily kept in good form, and highly ornamental, with its copious, rather large leaves, and its very handsome crested tufts of flowers, consisting, indeed, almost wholly of stamens, but those stamens so long, so numerous, and of so bright a red, as to be highly ornamental. The species is a native of Mexico; it is of easy cultivation, and easily increased by cuttings. It was introduced to our stoves by Thos. Harris, Esq., of Kingsbury, whose name it bears. As a genus, *Calliandra* (from *κάλλος*, *beauty*, and *ανήρ*, *δρὸς*, the *stamen*, in allusion to one of its most striking characters, the beauty of the stamens,) is dismembered very judiciously by Mr. Bentham, from the over-loaded genus, *Inga*, and includes such as, altogether natives of the American continent, resemble *Inga* in the flowers, and *Acacia* in the fruit. Sixty species are described by Mr. Bentham, L.C." Synonyme, *Inga Harrissii.* *Bot. Mag.*, 4238.

Fu′chsia macra′ntha. Writing of this plant, Sir W. J. Hooker says:—"If this be not the most brilliantly-coloured of *Fuchsias*, it certainly can boast the largest flowers, and it bears them more copiously than any other species. It is moreover quite an undescribed species, first, however, found by Mr. Mathews, climbing on trees in lofty mountains at Andimarca, Peru, (n. 1197 of Mathews' Collections,) and it has been long in our Herbarium from that source; and next by Mr. Veitch's collector, Mr. William Lobb, detected in woods near Chasula, Columbia, at an elevation of 5,000 feet above the sea." *Bot. Mag.*, 4233.

MAXILLA'RIA WA'RREANA. "This is a very distinct and very lovely species of *Maxillaria*, first detected, as it would appear, in Brazil; at least it was, according to Mr. Loddiges, cultivated there by Mr. Warre, after whom it is named. Our plants were sent from St. Martha, New Grenada, by our collector, Mr. Purdie, and flowered in the Royal Gardens, and at Syon, in August, 1845. The delicate and almost snowy, or yellow-white of the ground of the flowers is beautifully contrasted with the rich purple of the inside of the lip." *Bot. Mag.*, 4235.

This is *Warrea tricolor* of Dr. Lindley.

ODONTOGLO'SSUM MEMBRANA'CEUM. "This delicious species," writing of it, Dr. Lindley says, "for so it deserves to be called, on account of its agreeable odour and delicate flowers—this delicious species is quite like *O. Cervantesii,* figured in this work at p. 36, of the volume for last year, in general appearance, and may possibly be a mere variety of it. It differs, however, in the following respects:—Its flowers are white, and rather larger, and the lip is spotted at the base; its petals are much blunter; its lip is very deeply heart-shaped, and quite rounded at the point; the two front teeth of the lip are shorter, and less hairy; and the concavity at the base of the lip has a much smaller central tubercle. In other respects the two plants may be considered as being identical. They are both Mexican, and may be regarded as among the finest species of that country." *Bot. Reg.*, 34.

PRI'MULA INVOLUCRA'TA. "This is a neat and very desirable sweet-scented little hardy alpine perennial, which grows freely in a soil composed of sandy loam and leaf-mould. It attains a height of six inches, flowers from March to May, and sometimes a second time during the growing season." When in a state of dormancy, it should be preserved comparatively dry, to prevent the chance of injury from damp. It has recently been "raised in the garden of the Horticultural Society, from seeds from the North of India, presented by Captain Wm. Munro," and was said to have been found in the neighbourhood of water, 11,500 feet above the sea. *Bot.Reg.*, 31.

SAXIFRA'GA THYSANO'DES. "The confusion that reigns among the Berganian *Saxifrages* of India has been mentioned at fol. 65 of the volume of this work for 1843. It has, no doubt, arisen from the inadvertant intermixture of different species under the same name, as is sufficiently shown by the example before us, which was sent from India as the true *S. ciliata.* But it cannot be that, because its inflorescence is compact and nearly simple, its leaves hirsute on both sides, and its calyx perfectly smooth. It is in reality a plant of which dried specimens were distributed from the India House, before the return of Dr. Wallich, under the name of *S. ligulata.* But it differs from *S. ligulata* in its short petals, more diminutive inflorescence, and hirsute crenated leaves, which are by no means cordate, as those of *ligulata* always are." It is a dwarf, hardy perennial, flowering in April. *Bot. Reg.*, 33.

NEW OR INTERESTING PLANTS EXHIBITED IN LONDON OR ITS SUBURBS, IN FLOWER, OR DESERVING NOTICE.

ACHIME'NES PA'TENS. This long-desired lovely species of a lovely family is in the possession of the Horticultural Society, and was in present flower, at their last meeting in Regent Street. Mr. Hartweg met with it at Mexico on his way out to California on another botanical exhibition, and despatched it to this country by post. The habit and appearance of the plant is like that of *A. grandiflora,* and its flowers bear some resemblance to those of that species, but are unlike it in having a curious spur, and being of a much finer colour: at least, some varieties are. There were two varieties present at the meeting above mentioned, one with larger but paler flowers than the other, and with the spur larger and of a different colour to its flower. The variety with smaller flowers is much the most superior, its flowers beautiful deep bright purple, with the spur small and of the same deep colour.

ANGULO'A SPES.—Mr. Mylam, gardener to S. Rucker, Esq., Wandsworth, had in a collection of *Orchideæ* he exhibited at the recent meeting of the Royal Botanic Society, a very fine member of this genus, with somewhat slender long pseudo-bulbs, bearing seven flowers, something in colour and shape like those of *Acineta Humboldti,* but much larger, and the colouring in larger spots and blotches, the lip rather large; a dull crimson colour; the flowers supported on strong peduncles nine inches to a foot high. No perfect foliage was borne by the plant at the time of its flowering, further than the leaves of the young growth, which were rising in a fine healthy manner.

ÆSCHYNA'NTHUS PU'LCHER. This is a member of a very ornamental genus recently added to the fine species we already possess, by the Messrs. Veitch, of Exeter, who have imported it from Java.

It is a handsome species, of trailing habit, with ovate, obtuse, opposite leaves, bearing axillary and terminal pairs or clusters of flowers, which are large, and have a deep brownish calyx. They are waxy red and curved, with a four-parted spreading limb, and a whitish blotch at their throat. It promises to be a free flowerer.

Barke'ria spes.—Mr. Robertson, gardener to Mrs. Lawrence, Ealing Park, had in his collection of *Orchids*, at the last Chiswick exhibition, a very elegant *Barkeria*, similar in foliage and growth to *B*, *Lindleyana*, and bearing, on a very slender stem, a spike of delicate lilac flowers, whose sepals are oval and their petals broadly ovate, and slightly waved. The lip is similar in colour to the other parts of the flower, and is curiously folded back, and to appearance joining together. It is a very graceful and charming species.

Balsam'ina spes.—Another importation of the Messrs. Veitch's. It is a native of Java, and is an open-branched plant of slender growth; has fine lanceolate leaves, which are irregularly produced in pairs, or whorls of three and four leaves. The handsome flowers are borne on long peduncles, their large flat corolla, bright rose, deepest at the centre, and it has a long spur. A plant was exhibited at the recent Chiswick meeting.

Campa'nula no'bilis. A species of Mr. Fortune's introducing, a native of the North Province of China, quite hardy, and in general character like the Canterbury Bells, *Campanula media*, but according to its appearance when grown in a pot, much less strong; it has long-petioled rough, heart-shaped leaves, and produces a rather slender spike of large bell-like flowers, which are a brownish-lilac colour out but paler inside. It was produced from the garden of the Horticultural Society, at a meeting of that body in Regent Street.

Cu'phea platyce'ntra. A plant bearing this name was exhibited at the June meeting of the Royal Botanic Society, Regent's Park, by Mr. Smith, gardener to Joseph Anderson, Esq., the Holme, Regent's Park. It was stated to have been received from South America, in 1845. It is a straggling-growing, long-branched plant, with lanceolate opposite leaves and axillary flowers, composed of a channelled scarlet tube, being at once the calyx and corolla. The singularly situated petals usually found in the members of this genus are not present in this species, but where on the upper side of the mouth of the calyx they are usually attached, there is a blotch of a whitish colour. The mouth of the tube is fringed.

Didymoca'rpus crini'tus. This species is one of the Messrs. Veitch's recent importations. It was present from them, on the 2nd of June, at a meeting of the Horticultural Society, at their Regent Street Rooms. It is a stove plant, with rather short much-wrinkled leaves, deep-green above, and of a deep sanguineous hue beneath; the flowers rise from among the leaves, which form a compact cluster on the surface of the soil, and are solitary, supported on rather long peduncles. They are tubular, and have a small divided limb, white, with a yellow streaked throat. It is an interesting addition to the stove.

Dendro'bium hyme'nophyllum. A species with slender, rather tall stems, bearing a short drooping raceme of small greenish flowers, having a long spur, but possessing no beauty. It was present, from the same gentlemen, and at the same time as the preceding plant.

Dichoriza'ndra ovalifo'lia. This plant was present at the last Chiswick exhibition. It is more strange-looking than beautiful, and consists of a strong upright stem, the upper part of which bears the broadly-lanceolate, sessile, dark-green leaves, the whole surmounted by a close short spike of purple flowers. It was from the Messrs. Veitch's.

Helio'phila tri'fida. A very pretty annual, another introduction of Mr. Fortune's to the garden of the Horticultural Society, from whence it was sent to their rooms, Regent Street. It is a very pretty glaucous, slender, much branching plant growing about a foot high, flowering most freely, and having rather few, irregularly divided leaves, whose spreading segments are linear. The flowers are small, circular, blue, having white centres; and are only expanded the early portion of the day, closing about noon, and soon afterwards falling off.

Ligu'strum japo'nica. The Messrs. Veitch have recently imported this species, which is a beautiful hardy evergreen, with fine dark-green, ovate leaves, and compound racemes of white fragrant flowers. A small plant was sent from Exeter to the last exhibition at Chiswick, which had two racemes of flowers. As a hardy ornamental evergreen, it is an acquisition, for a large specimen in flower would be a beautiful object.

Nepe'nthes spes.—A plant of this genus was brought to the June exhibition at Chiswick by Mr. Mylam, gardener to S. Rucker, Esq., Wandsworth, which has something of the foliage and style of growth of *N. distillatoria*, with pitchers resembling those of *N. ampullaceum ;* both leaves and pitchers are very thickly and freely produced. It is a very interesting, hardy-looking species.

Tore'nia asia'tica. This is a dwarf-growing, much-branching, trailing-like stove plant, bearing most lovely flowers. It has ovate, serrated, opposite leaves and flowers, which are produced very freely towards the points of the shoots, and consist of a rather large green calyx, in which the flower is situated as in a sheath. The corolla approaches campanulate-shape, and has a tube which is deep purple inside. The limb is four-lobed, the lobes wide-spreading, their ground-colour purple lilac, and the two lateral and lower ones have a very deep velvety black-purple blotch on each, which by its brilliancy casts a shade on the ground-colour of the limb. It was sent to the last Chiswick exhibition from Kew, and was exhibited in a box, which sheltered it above and on three sides, and the shade it was thus favoured with heightened in a peculiar manner the charm of its flowers.

Tropæ'olum spes.—A curious plant, a member of this genus, covered with a glaucous hue, and having many-cleft rotate-like leaves, with greenish-white flowers, of no beauty, but singular. It was sent to the first Chiswick exhibition, by Mr. Green, gardener to Sir C. Antrobus, Bart.

OPERATIONS FOR JULY.

This month ushers in the period when the culturist generally, as well as those who do not engage directly in the actual operations of the garden, begin to reap, in the out-door department, the fruit of their labours ; it occurs more in the case of the highly kept, modernly-managed gardens, than those which are less so, for those gardens most strictly managed in the modern style, depend principally for their chief beauty and general display of flowers, upon the tender and exotic plants, and as these are seldom all turned out, and each point of the gardens completely furnished, till at least the middle of June, it will be easily understood little effect is produced by this period, though indistinct glimpses of beauty begin to appear. The less scientific, more usual gardens, so to speak, from consisting of less costly materials, and being composed of those plants, shrubs, and trees, more naturally accordant with the climate of England, have, in proportion to the extent they are employed, a greater or less display of flowers, a more or less engaging aspect, from as early a period as the commencement of vegetation in spring. The two kinds of gardens alluded to, have each their respective excellences, advantages, and disadvantages. That most delightful is, perhaps, the one which combines a nicely regulated, judiciously arranged, and amalgamated portion of the features of each. But to the operations of the month :—

The state of the weather is the great regulator of the principal work at this season : the hinge upon which the main garden work turns. If we are to experience a continuance of the drying, hot weather that has characterised the preceding month and chiefly that of May, our principal business is easily determined, and is comprehended in watering and shading. Would that the result of our labours was generally as satisfactory in the former, as it is in the latter practice ! But small as is the result compared with the amount of labour, expended, it is our own fault if there is not some proportion evident ; for instance, if the care we exercise is restricted to the mere application of water, without any effort to insure any of it effecting what it is capable of, a great deal of labour is certain to be thrown away. Briefly to turn our attention to the flower garden, and the method of procedure there in reference to watering :—All we can do at most, is to preserve plants alive and maintain them in good health ; but we may make a great outlay of time and labour, and only effect this, or effect it with comparatively little. It is the experience of every one in hot drying seasons, that however much water we may pour upon the surface of the earth we wet no more than the surface, for it will escape in all directions upon, but will not enter the ground. The surest method of inducing it to do so, or rather the most serviceable plan of applying water to plants in the open ground, as we have directed in a recent calendar is, to remove the surface soil to a depth of an inch or two under some circumstances, and more or less according to the nature of the plants occupying the ground, and about to be watered, and loosen the soil exposed with a small fork or suitable instrument, and then at the time of watering pour on sufficient to *completely saturate* every particle within reach of roots ; which will do more lasting good by being practised once a week or fortnight, or less often, as the case may be, than regularly pouring a certain quantity once or twice a day in the usual manner, on the surface of the ground. This plan carried out, alike in the case of newly-removed shrubs or trees, large masses of Rhododendrum, &c., requiring water, or the ordinary beds of the flower garden, will be highly beneficial. There may be instances in which it will be impossible to proceed in the way directed, and occurring to plants in the open ground, such as those that require as much attention in regard to watering, as pot plants ; but these cases, of course, constitute exceptions. By removing the surface soil, we do not intend it to be understood that it is to be lifted away to be again returned, which would be a tedious and almost impracticable operation, but in the case of a flower-bed we would take a trowel and adjust to one side a foot in extent of the surface here, make a long channel there, and so on, and where practicable, employ a hoe, or spade, according to the nature of the plants, shrubs, or trees, so watered. In connection with this subject, we may add, that interposing some material to check evaporation, shading, mulching, &c., as directed in former calendars, may be practiced with advantage.

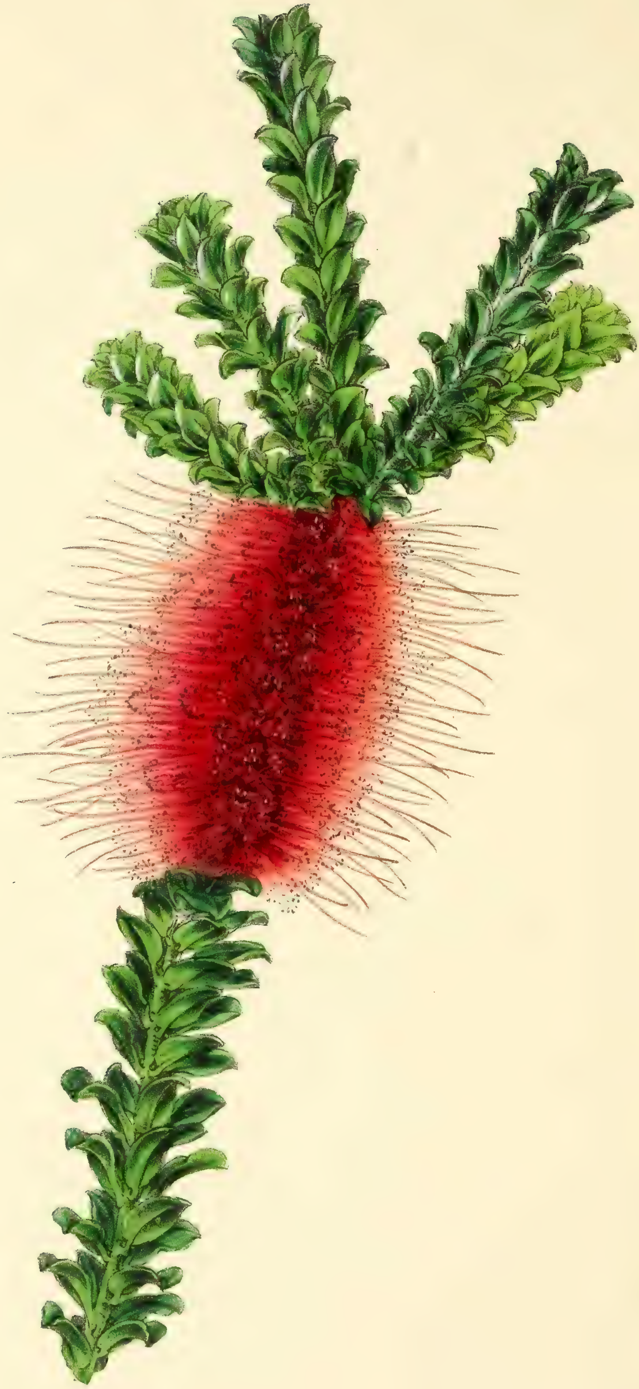
The actual work of the flower-garden and shrubberies, further than that referred to previously, is simply a repetition of daily and weekly operations ; such as pegging down the shoots of plants, stopping those that require it, to check their luxuriance, or induce them to branch, tying and training every description of plant, in whatever situation, requiring support, removing any luxuriant shoot that may show an inclination to monopolise the energy of its parent plant, to the disadvantage of the other ramification of its branches, thinning out others, &c. Rigidly cut away all decayed flowers, and their seed-vessels, if seed is not wished to be saved. In training climbers, begin to leave the lateral growths unsecured, not being afraid they will look ragged and untidy. Great and beautiful effect is produced by timely attention to this point. The last direction will of course require some qualification in the case of a plant placed to cover a wall or open space of any kind. Attend to the removal of dead and decaying Rose-flowers, cut back their gross shoots, and rout up suckers, not wanted. Propagate by budding, layering, and by cuttings, according to the kinds and circumstances. The flowers of Carnations must still be thinned ; any kind of insect attacking them exterminated ; their grass layered ; and, as well as that of Pinks, piped. Repot any intended for forcing, and place in pots such as are sufficiently rooted, and are for that purpose. Other descriptions of plants which are purposed to produce flowers in winter, should now be encouraged to mature their wood, and those growing may be stimulated to complete their growth. Continue to lift all bulbs as their foliage indicates their fitness for being taken up, exposing them in some cool airy situation, that they may be ripened in a natural way.

To pot-plants great attention to a proper application of moisture is necessary, particularly small ones, and if continued dry weather should prevail, the principle upon which we urge its being administered to plants in the open ground, holds good in reference to them. Much may be done towards keeping young pot-plants suitably moist, by regarding our former directions to plunge them, &c. Those inmates of the stove and greenhouse which are completing their growth must have their supply of water diminished, and be removed from within reach of growing stimuli. Many such from the stove may be placed in the greenhouse, and some of those from the greenhouse in the open air, so as to secure the proper maturation of their wood. Those still growing will not bear slighting either as regards shading, or a growing temperature being maintained, proper re-potting, stopping their shoots, training, &c.

Orchids demand various degrees of the application of the principle of treatment recommended for other plants, in the foregoing directions. Those beginning to show signs of having completed their growth must be gradually withdrawn from exciting influences, and placed in situations favourable to their well-being. On the contrary, the very many still vigorously growing will require the opposite treatment.

Sow some seeds of the favourite and choice annuals, as well to flower in autumn, in pots, as in the open ground. There is no impediment to the seeds of some of the annuals alluded to being scattered in beds of the less permanent flowering plants, while they are still occupied, as they may, when up, be treated properly without the welfare of the legal occupants of the beds, or their own, being endangered, and they would quickly succeed the last-mentioned in flowering.

Chrysanthemums and other soft-wooded plants grown in pots must not be forgotten but steadily brought forward. Neither must propagation by cuttings, suckers, &c. of those numerous plants so easily and conveniently increased at this season be lost sight of.



S. Holden del. & Lith.

Beaufortia splendens

BEAUFÓRTIA SPLÉNDENS.

(Splendid Beaufortia.)

Class.
POLYADELPHIA.

Order.
POLYANDRIA.

Natural Order.
MYRTÀCEÆ.

Generic Character.—*Tube of calyx* turbinate, limb five-parted, lobes acute. *Petals* five. *Bundles of stamens* five, opposite the petals. *Anthers* inserted by the base, bifid at the apex; lobes deciduous. *Style* filiform. *Capsule* corticate, incrusted to the tube of the calyx, three-celled; cells one-seeded.—*Don's Gard. and Botany.*

Specific Character.—*Plant* an evergreen shrub; *branches* slender, rather straggling. *Leaves* oval, broad at their base, sessile, blunt, alternate, entire, smooth, light-green, small. *Flowers* in rather short clusters, scarlet. *Stamens* in rather long parcels, on a long claw. *Style* very long.

All we know of the history of this plant is, that it is a native of New Holland, from whence it is stated to have been introduced in 1830, and that Baxter, a traveller in that country, and collector of its plants, is given as the author of its specific title.

The genus *Beaufortia* was founded by R. Brown, and comprises a few species only of interesting plants. The present member is free-growing, somewhat open-branched; its branches are rather slender, and bear their flowers in the early winter months. It differs from *B. decussata*, formerly depicted in our pages, in being less robust, and much more lively in appearance, especially when in bloom, in consequence of the difference in the colour of their inflorescence.

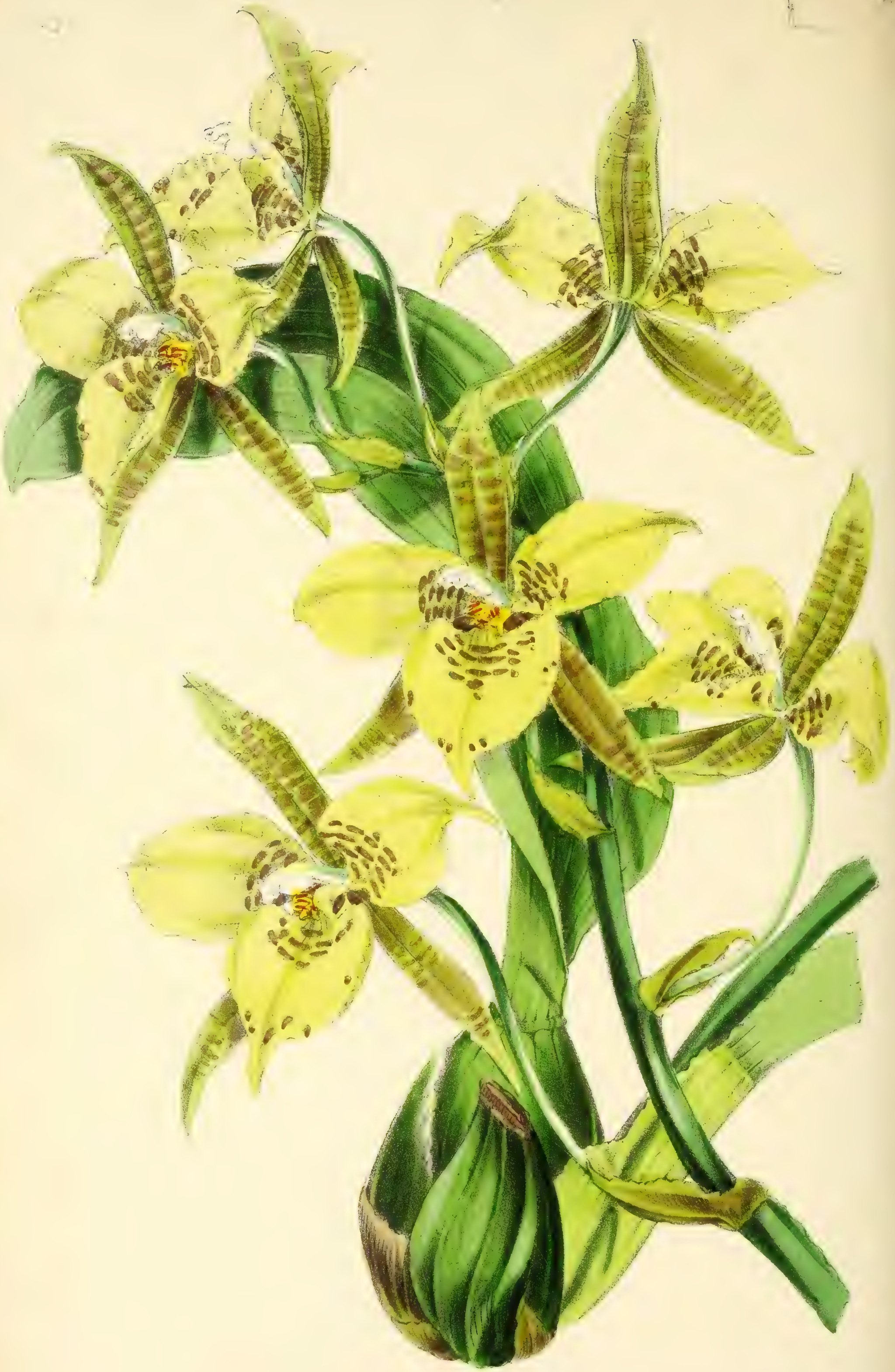
A class of plants, of which the members of this genus, those of *Melaleuca*, *Calothamnus*, &c., are instances, in the greenhouse, and *Inga* and others, in the stove, do not receive the attention they are worthy of; vested as their beauty is in what is usually considered, viewing them in an ornamental light, the inferior parts of the flower, and many of them not being of a very showy character, they are passed over for more gaudy, but less deserving things.

Independent of their flowers, which are indeed highly interesting, and especially beautiful, as is discovered when they are attentively regarded, they are distinguished by a great diversity of habit, difference of foliage, &c., and they are very hardy: we have known them, the greenhouse section at least, flourish and bloom under the hardest usage. A collection of plants with the style of inflorescence, alone, of those under consideration, would constitute a fine group, and be most engaging.

Specimens flowering the latter part of the year 1844, in the collection of Messrs. Knight and Perry, by the kindness of those gentlemen furnished the subject of our drawing

B. splendens strikes readily from cuttings, and should be grown in sandy, light soil, such as maiden loam and peat, or leaf-mould, with sand, &c.

The generic name compliments a patroness of botany, Mary, Duchess of Beaufort.



S. Holden. del. & Lith.

Odontoglossum cordatum.

ODONTOGLÓSSUM CORDÀTUM.

(Cordate-lipped Tooth-Tongue.)

Class.
GYNANDRIA.

Order.
MONANDRIA.

Natural Order.
ORCHIDÀCEÆ.

Generic Character.—*Perianth* showy, equal; sepals and petals narrow, acuminate, free. *Labellum* undivided, destitute of a spur, furnished with a short claw, which is continuous with the base of the column, having a crested spreading plate at the base. *Column* erect, membranous at the margin, winged on each side of the apex. *Anthers* two-celled. *Pollen-masses* two, solid, with a linear caudicle, and a crooked gland.

Specific Character.—*Plant* an epiphyte. *Pseudobulbs* oblong, compressed, two-leaved. *Leaves* broadly oblong, smooth, acute. *Scape* scaly, short, spreading. *Racemes* distichous. *Bracts* ovate, acuminate, membranaceous. *Sepals* and *petals* linear-lanceolate, very acuminate. *Labellum* cordate, acuminate, entire, two-lobed at the summit.

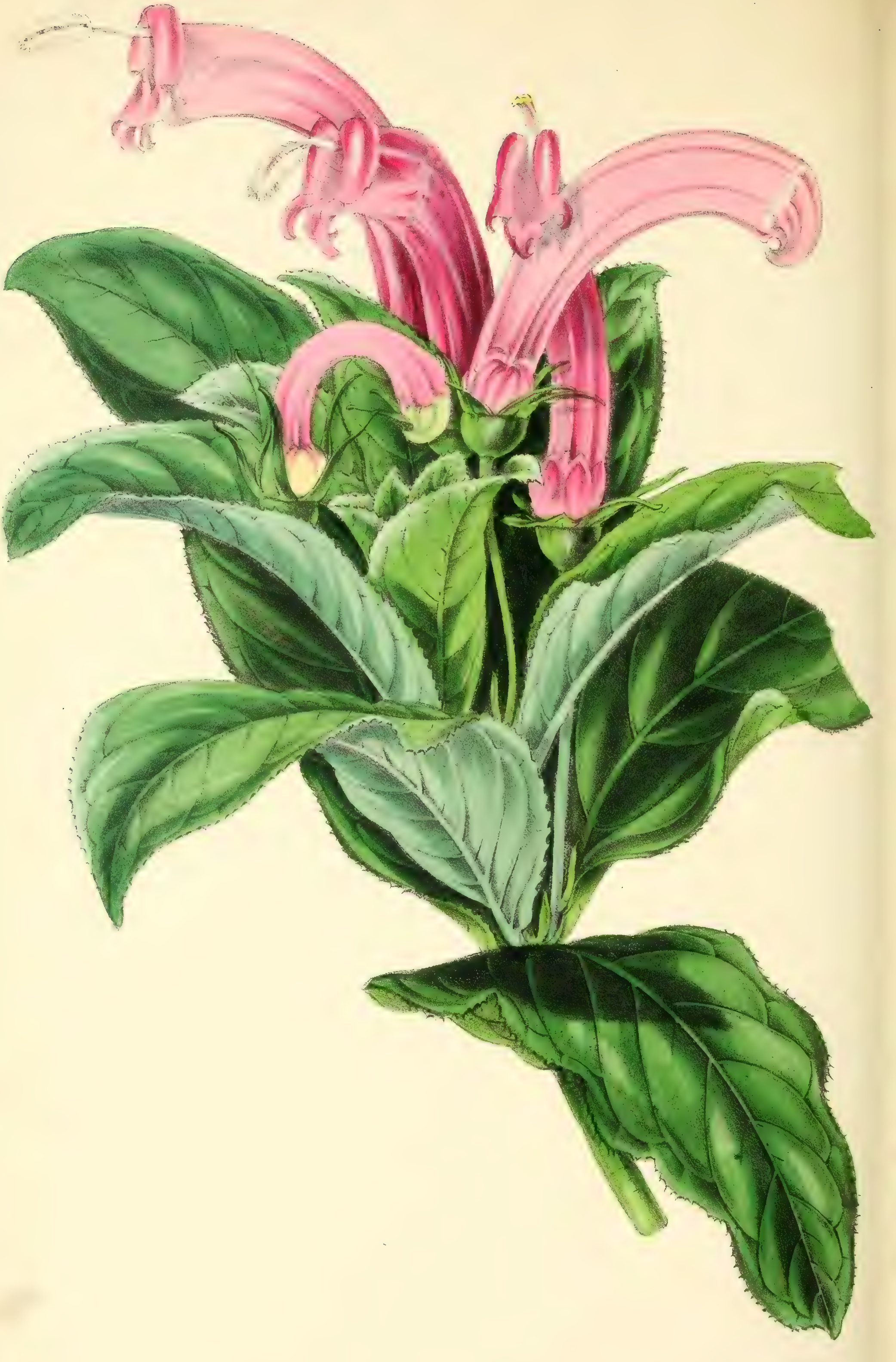
The species now presented belongs to the third "Xanthochilum, stained lip" section of Dr. Lindley's arrangement of the genus in the "Botanical Register" for last year. In the section, "the species with a three-lobed lip comes first, and then those which have an entire lip are stationed in the following order: viz., such as have obtuse sepals and petals; then such as have them acute; and last come the species with very much acuminated sepals and petals." Our subject belongs to those characterised by the last features; further, and indeed we need not have pointed to this, of its specific difference or general character, our plate saves us the trouble of writing.

Modern botanical publications do not contain a figure of this fine plant: the volume for 1838, of the work previously quoted, first speaks of it as being then, the first time, flowered by George Barker, Esq,, of Birmingham, who imported it from Mexico, where it is a native. The drawing for the accompanying plate, through the favour of our usual permission, was prepared from a specimen in the collection, so famous for the superior manner in which it is cultivated, of S. Rucker, Esq., of Wandsworth, which flowered in January last.

There is an idea, a too general one, respecting this very interesting tribe, that a great degree of heat, and a proportionate amount of moisture is indispensable to the welfare of all its members; it is true of many, that such is essential to their welfare, but it is not at all required to the extent commonly understood. A very small plant of *O. cordatum*, received by us some time ago, was secured to the rhizoma of a Fern, and placed in a situation where it was as cool and as much exposed to abundance of air, as if it had been in an ordinary greenhouse ; yet, being favoured with shade, plenty of water, and a moist atmosphere, it grew in as fine a manner as could be desired.

O. cordatum may be grown attached to the material mentioned, a suitable block of wood with something to root into, or potted in rough fibrous peat, *sphagnum* moss, potsherds, charcoal, &c., commingled, well elevating the pseudo-bulbs above the material in potting. The degree of moisture furnished to it when growing, must be regulated by the temperature it enjoys ; it will succeed well with an ample amount of each, favouring it, when resting, with a proportionately reverse condition. It is increased by separating the pseudo-bulbs, which operation should be performed about the period the plant commences to make a new growth.

Odous a tooth, and *glossa* a tongue, in allusion to the labellum, furnishes the derivation of the generic name.



Holden del. & lith.

Centropogon surinamiensis.

CENTROPÒGON SURINAMENSIS.

(Surinam Centropogon.)

Class.
PENTANDRIA.

Order.
MONOGYNIA.

Natural Order.
LOBELIÀCEÆ.

GENERIC CHARACTER.—*Calyx* with a sub-globose tube. *Corolla* with an entire tube, tubularly incurved; upper lobes larger, falcate, galeate; lower ones spreading. *Anthers*, the two lower ones ovately triangular, cartilaginous. *Annulus* fleshy. *Berry* globose, two-celled; pericarp slender; placenta large.

SPECIFIC CHARACTER.—*Stem* simple, smooth. *Leaves* elliptical, acute or acuminate, shortly petiolate, toothed; teeth small, acute. *Pedicels* rather shorter than the leaves, bibracteolate at the base. *Calyx* with an hemispherical tube; lobes lanceolate, acuminate, longer than the tube, slightly toothed. *Corolla* incurved, upper part subventricose; upper lobes larger, recurved. *Anthers* much exserted, hairy. *Berry* globose.

SYNONYMES.—*Lobelia surinamensis, L. sphærocarpa, L. spectabilis* and *cornuta, Siphocampylus spectabilis, S. macranthus, S. surinamensis.*

OUR description of this subject and synonymes are taken from De Candolle's "Prodromus." It will be imagined, from their number, that the plant has passed through the hands of many botanists, which is the case, and which again conveys the idea that it is an ancient species, which is also correct, for it was known and described more than half a century ago.

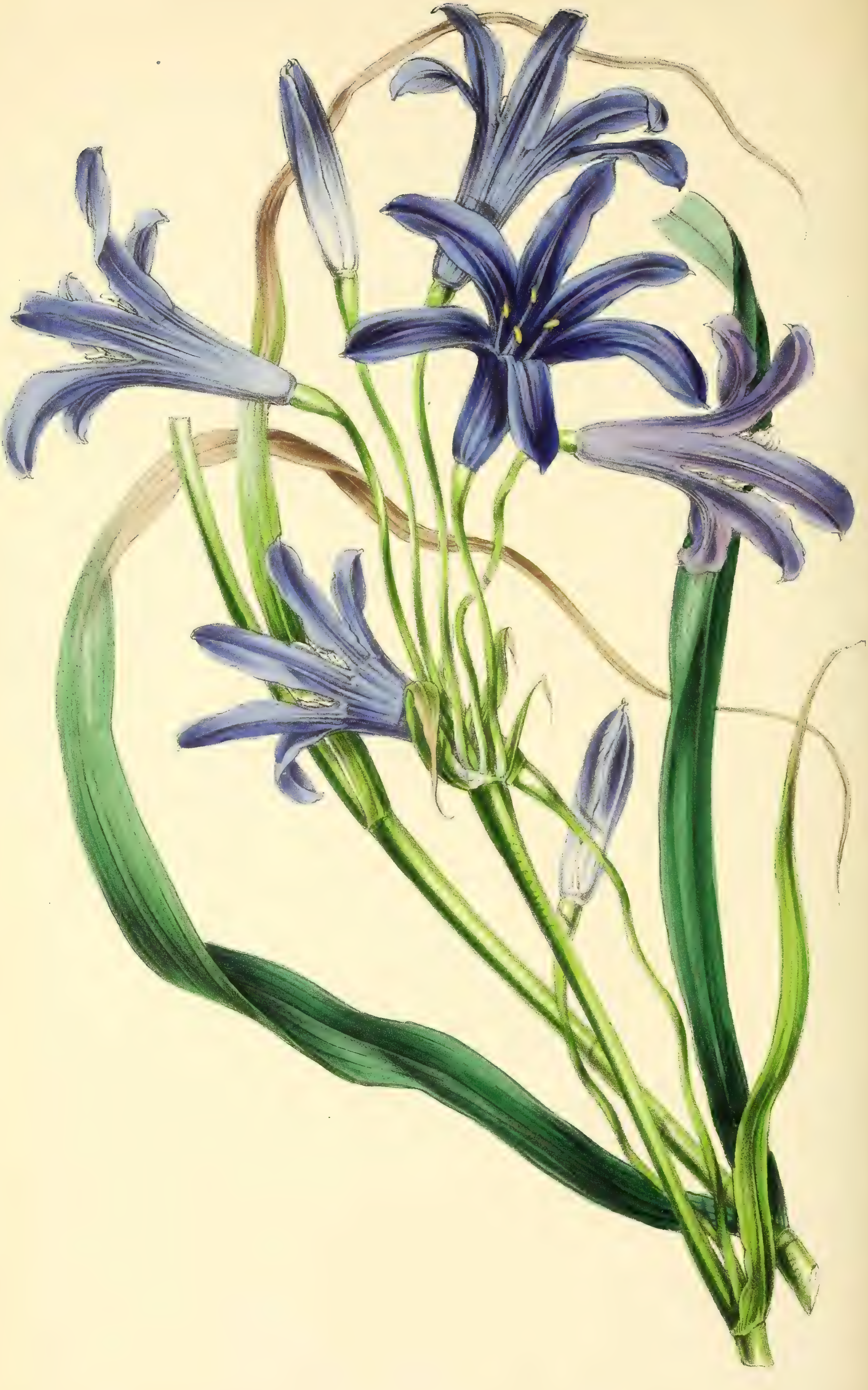
It is placed in the genus it is now a member of by the author already mentioned, is a native of Surinam, whence it takes its specific name; and, in addition, is said to be found in New Grenada and Brazil.

As a useful and handsome plant, its claims to attention are considerable. It is a long and free bloomer, and producing its flowers as it does, in the early as well as greater part of the year, becomes valuable from that cause. In habit it is close-growing, and forms a dwarf compact bush, with, as will be seen, numerous large handsome coloured flowers, and abundant shining green foliage; the leaves being much like those of a Peach, it cannot fail, especially in good hands, to be very ornamental.

On the score of management, there is no grounds for apprehending it can be improperly treated, so easily is it induced to flourish and flower, and still it is not a common plant. It is generally regarded as requiring to be kept in the stove, and in the winter season it is then, in all probability, most useful; but we have also seen it succeeding in a very satisfactory manner in a situation where greenhouse accommodation only was afforded; further still, we are not aware of any obstacle to prevent it flourishing in summer when planted in the open air; it is as exactly suitable, and as likely to do so as other plants in the Order, which custom had once and long prescribed stove management for, and which now are found to do better there. If it should be found to succeed out of doors, it will be very useful for a sheltered border, if not in the flower-garden.

This is another addition to the many subjects we have been favoured with from the collection of R. G. Lorraine, Esq., of Wallington Lodge.

Sandy loam and leaf-mould or peat is suitable soil, and it is easily increased by cuttings, or the sucker-like shoots found at the base of the plants.



S. Holden del. & Lith.

Ixiolirion montanum.

IXIOLÍRION MONTÀNUM.

(Mountain Ixia-Lily.)

Class.
DECANDRIA.

Order.
MONOGYNIA.

Natural Order.
AMARYLLIDÀCEÆ.

GENERIC CHARACTER.—*Corm* tunicate. *Stalk* bracteate, with axillary or terminal peduncles. *Perianth* deeply-cleft, funnel-shaped, half-spreading. *Filaments* straight. *Anthers* versatile. *Style* straight. *Capsules* oblong, striped, three-celled, three-valved. *Seeds* numerous, oval-oblong.

SPECIFIC CHARACTER.—*Corm* ovate, about an inch long. *Leaves* stem-clasping, deeply-channelled, linear, acuminate. *Peduncles* axillary and terminal, one to three-flowered. *Germen* slender, oblong. *Corolla* divided to the bottom, the outer petals narrower and less coloured. *Filaments* alternately equal. *Capsule* oblong, striated, three-celled, three-valved.

SYNONYMES.—*Amaryllis tatarica, A. montana, Alstrœmeria montana.*

THE really fine plant here represented, has, under various names, been long known to botanists. *Ixiolirion*, the genus of which it is a member, and, as far as is yet known, an only member, was founded, some years ago, by the Hon. and Rev. the Dean of Manchester, who, two or three years since, imported bulbs, through Colonel Sheil, from Teheran, in Persia, whose hills is one of the stations it inhabits naturally. The bulbs in question first produced flowers in 1844, from which a figure was given in the "Botanical Register" for that year.

It is a scarce, highly ornamental, hardy plant, will flourish in common garden soil, and flowers in spring. Its bulbs are small, dark-coloured, and it produces foliage sparingly, having few radical leaves; those few are linear and are a considerable length.

We met with the subject of our plate in May, flowering in a bed of bulbous plants which had been recently received from the same quarter, and through the same gentleman (Colonel Sheil), as those already mentioned, by Messrs. Knight and Perry, to whose attention we are indebted for the opportunity of preparing our drawing.

Although the nature of *I. montanum* renders the open border its most appropriate situation, it is not there alone it can be seen to advantage; for, saving that it is minus the fragrance, and has not such fine foliage, it is in every respect equal, indeed is superior to a *Hyacinth* of a similar colour; its free and elegant habit puts to shame the mechanical air of that plant, and there is no doubt but it can be as easily brought into flower early by forcing. This being effected, we leave it to be imagined how acceptable its flowers and their colours would be among the inmates of the greenhouse in the dulness of winter.

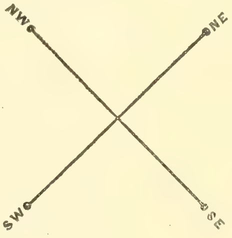
Its increase can be effected by seeds, which ripen freely, and doubtless also by offsets of its bulbs. Whether grown in the open border, or in pots, to flower early, we would recommend that it be planted in moderately rich soil; for though it may easily, without question, be induced to grow in a strong manner if furnished with one of a rich description, it is to be feared such a result would be brought about at the expense of the elegance of its habit, and the natural colouring of its flowers.

ELECTRICITY AND VEGETATION.

THE theory of Electro-culture is of general application: it is either a fiction, a fallacy, or it is founded upon natural phenomena, which can neither be controverted nor disproved.

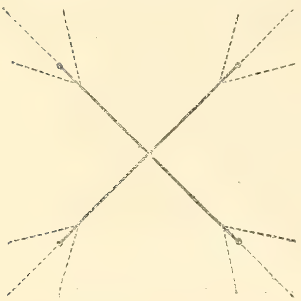
When Dr. Forster announced his electrical experiments upon farm crops, he appeared to have acted upon the principle of an hypothesis advanced by M. Ampere, a French philosopher, namely, that the *magnetism* of the earth was induced by a continuous stream or current of electricity round the globe from east to west: he therefore placed his long poles, and strained his receiving wires between their summits, in a direction north and south, corresponding with that of the magnetic meridian. But we are not sure that such a current prevails, although the diurnal motion of the earth from west to east might appear to sanction the idea; and therefore Mr. Sturgeon (in the last section of his Electrical Essay, to which we referred last month,) proposes a new modification of apparatus founded upon the prevailing currents of the wind.

" Since then," he says, " there is no reason to believe that a continuous electric tide in the air sweeps the surface of the land from east to west, nor any means at our disposal to confine electric influences within the limits of a marginal wire in the ground; there is no authority from facts for making choice of the magnetic meridian, nor ought it to be expected that any gain is to be derived by bordering a plot of land with those that are underground. The prevailing winds in most parts of Great Britain are easterly in the spring, and westerly during most parts of the summer; therefore a wire is stretched in a N.E. and S.W. direction, and another, beneath or above, crossing it at right angles near the middle" (see the figure). Mr. Sturgeon uses the words " pairs of wires," but it is evident that one wire across each *pair of poles*, is what he intended to express.



The wires ought to be copper, because that metal is a better conductor, and is not so liable as iron to be corroded and oxidised. The poles should be elevated far above the influence of the plants which it is intended to excite, and they should also be remote from tall trees. The very mention of the latter, as excellent natural conductors, is sufficient to substantiate the theory of vegetable attractive power.

It is not unlikely that where it is the object of the gardener to excite oblong or oval beds of plants, he would prefer the system of underground wires passing around the plot, and connected with the upper supplying wire by others descending by the poles, and fastened to those within the soil. But according to the improved modification by Mr. Sturgeon, " the principal wires at the bottom of the system, which receive the fluid at the ground, ought to stretch from pole to pole, directly under those suspended above; and from these *main wires*, or prime conductors, others ought to proceed in various directions, especially on dry land."



In the figure, the round dots at the ends of the black lines indicate the situations of the four poles; the black lines themselves representing the main underground conducting wires. The secondary dotted lines show the branch wires, which are joined to those main cross wires.

When a stream of electricity passes into a conductor, whether from the air or from an artificial machine, it excites all the particles of which that conductor is composed: they are all rendered polar; and thus, as in voltaic electricity, an interchangeable reciprocating series of attractions takes place, which assumes the form of a current: at the same time every exterior particle radiates, and communicates the fluid to any surrounding medium. Thus, in the above examples given in the figures, the cross wires upon the poles, receiving a charge whenever the atmospheric electricity is *positive*, convey the fluid from particle to particle, to the underground series—consisting of the four main, and twelve subsidiary wires—which then pour forth an electric effluvium, not only from their points, but from their entire surface; so that the ground becomes electrified to a considerable extent beyond the boundaries of the wires themselves.

In dry settled weather the air is generally positive, and then so long as the ground shall remain rather free and moist there can be little doubt that a very efficient supply will be afforded from above; but as by becoming parched its conducting power is greatly lessened, it would be prudent to bury the ground wires four or five inches below the surface, so as to secure the advantage to be derived from some moisture retained even during the longest periods of ordinary drought.

In order to explain the conducting power of soil, its increase during moist weather, and its abatement—if not almost total suspension—under an opposite condition, we will appeal to an hypothesis, which some may deem extravagant, although supported by an experiment rather familiarly known. As it is admitted that electric and voltaic electricity cannot decompose any fluid or solid, unless that which is termed a current pass into and through it, the *converse* of the proposition is claimed, and our hypothesis requires that the current, or electric stream, shall be the inevitable concomitant of decomposition. *Water*, or *ground moisture*, is a *conductor;* dry earth, which is composed chiefly of flinty matter, is the reverse: the conducting quality, therefore, is in proportion either great or small.

Water is decomposable by electro-voltaic action; that is, all and each of its particles are electrized, and reciprocally convey electricity from one to the other, with a development of the elements, oxygen gas and hydrogen gas. But the conducting or decomposable condition of water is greatly promoted by a small degree of acidulation, and also by the presence of a certain quantity of manuring substances within the soil.

Now, manured earth is precisely in the required condition; and when a halo of electric matter is made to emanate from a system of wires in the one case, or from a circulating or bounding wire (Dr. Forster's) in the other, we assert that every particle of radiated matter polarizes, and excites (with decomposition) a definite quantity of manured water, and thus prepares it for the plants and mainly promotes its introsusception in the form of nutritive sap. The ornamental and flower-gardener will be able to perceive the principles upon which we advocate the application of electro-culture to those branches of his art. We describe general principles, leaving their local adaptation to his skill and judgment; and now, in order to strengthen theory by an appeal to experiment, we beg the reader who, from attending lectures, or by medical treatment, is acquainted with the effects produced by electro-magnetic machinery on the hands and wrists, to retrace his peculiar sensations. The only point of moment which we insist on, is this—that so long as the hands remain dry, the feeling produced is generally insignificant; but if wetted, by immersion in water, or in a weak solution of salt, a peculiar numbness, and inability, without great effort and *power of volition*, to unloose the grasp, are instantly produced.

Water, therefore, is decomposed, and being the connecting medium between the machinery and the skin, it polarizes the nervous vital atoms of the system, and develops their electricity. If this view be correct, the theory of atmospheric electrical action ceases to be problematical, and therefore the operation becomes a legitimate subject of scientific and patient investigation.

Whatever may be thought of the practice of electro-culture in the large way, there can be no doubt of the instrumentality of plants themselves in conducting and appropriating atmospheric electricity. Every change of weather—hail, frost, snow, rain, or fog—is brought about by electrical disturbances. In a thunder-storm, the manifestations are peculiarly great. Mr. Sturgeon relates that, "on one occasion," experimenting with a kite, "a globe of fire, about the size of a musket ball, ran down the string to the ground. The *points* and *edges* of the *grass*, for some yards around the young tree to which the kite-string was fastened, *were beautifully illuminated!*"

The conducting power of herbage, naturally, furnishes indeed the most plausible argument against the employment of wires; and it has been proved that when the poles have not been sufficiently elevated above the summits of plants, the effects of the machinery have wholly ceased—the plants becoming their own attractors. But this natural action says nothing, because it is our object and argument to *improve*, and to show that we possess the means of improvement.

We also desire to blunt the weapons of prejudice; and, therefore, as it has appeared to be the object of many writers to check further enquiries by boldly asserting that every attempt has terminated in a failure, we have with great pleasure seized the earliest opportunity to advert to the authority of one of the leading electricians of the day, and earnestly recommend our enquiring readers—friends to truthful science and improvement—to recur to experiment, and never to abandon research.

Of one point they may rest assured; if electricity can in dry weather be made to operate upon the watery portions of the soil, it will decompose the manure or vegetable organic matter therein contained; and if so, will as certainly add luxuriance and richness of tint to the verdure of all plants: what effects it may produce upon the tintings of flowers we cannot conjecture, as authorities are absent; but so far from economising manures, it will be found that by hastening their decomposition electricity will require a more speedy supply to be given.

As the subject assumes importance, in both farm and garden, it will be interesting to consult the opinions of so judicious an observer of phenomena as Mr. Stephens, author of "The Book of the Farm." Writing upon weather and meteorology, he observes that the *electrometer* is an instrument of much greater utility than some of the instruments usually employed, "because it indicates with a greater degree of delicacy the existence of free electricity in the air; and as electricity cannot exist in that state without producing some sort of action, it is satisfactory to have notice of its freedom." The best instrument is the *condensing electroscope*, or that usually called the *gold-leaf electrometer;* its construction is easily ascertained by consulting any accredited book on the science, or by inspection at the makers of philosophical apparatus. The indication by the strips of leaf-gold is unerring, and affords another evidence of the truth of our theory; for if these strips diverge, merely by virtue of the electricity which is conveyed from the air by a pointed wire, that same power may be attracted by another arrangement of wires. The great point being proved, minutiæ will form no serious difficulty.

BRITISH PLANTS.

There is, perhaps, no recreation more within the enjoyment of the multitude, more replete with real and lasting pleasures, than the study of the wild flowers of our hedges. There is such a never-failing fund of variety, and so many remarkable and interesting features and peculiarities to occupy attention, that those who once fairly embark in the work, are seldom at a loss for amusement—neither is it a frivolous trifling of time, but an amusement teeming with instruction and refined pleasure. To young gardeners, and amateur cultivators especially, it is a fund from which a vast store of hints and ideas may be derived, that will prove of no little importance to the successful direction of their operations.

Highly, however, as we estimate the laudable desire to push enquiries into, and form a close intimacy with, the indigenous floral productions of our country, we have, at present, a further object in view than the mere recommendation to encourage a botanical spirit. It is with their ornamental qualities, their capacity for improvement, and capability of contributing to the interest and effect of a garden, that we have now to deal. And who that has any knowledge of the spontaneous productions of British soil—the wild furniture of the hedge-rows, hills, and moors—will deny their merits and adaptability for such purpose?

Although, in the scattered and incongruous manner in which plants are usually found distributed in a state of nature, many British species individually possessed of flowers of considerable beauty and attractiveness fail to create a striking appearance, we cannot in all cases, on a strict consideration, attribute this inferiority to the exotics of our gardens to any superior inherent excellence which the latter possess. The various modes by which the cultivator ameliorates the character, and adds to the effect of the plants of other countries, will tell with equal certainty, and to a corresponding extent, on those of our own. To go no further, even, than to afford them the advantage of being collected into a mass, we need seek no other proof of their showiness than a reference to some of those species which are more commonly met with naturally growing somewhat compactly in large numbers, of which we may instance the yellow clusters of Daffodils (*Narcissus pseudo-narcissus*), the fine blue flowers of the wild Hyacinth (*Scilla nutans*), so prevalent in our woods in spring, and the snowy patches of *Saxifraga granulata*, which adorn many of our mountain pastures.

Every gardener is familiar with the dazzling effect of a bed of scarlet Verbenas, and the comparative poverty of their appearance as single specimens scattered here and there; and many occupiers of the parterre, separately less beautiful than the *Verbena*, when planted in sufficient numbers and proximity to supply a moderate unbroken breadth of colour, contribute an effect that could scarcely be imagined from the character of individual specimens. To the neglect then of extending the system of grouping adopted with exotics to native species, we may safely and unreservedly ascribe their less conspicuous effect. It has been too much the practice where collections of indigenous plants have been cultivated, to adopt a systematic scientific arrangement, and consequently one or two specimens alone of each kind have been preserved together. Now, although we do not mean to dispute the utility or oppose the plan of planting collections expressly for a botanical end, we must nevertheless object to such arrangements being referred to, as a test of the capacity of British plants for contributing an ornamental feature to the pleasure-ground, or adopted as a means of creating it to the exclusion of other and more effective plans.

Assuming the system of bringing together a mass of the same species as the first and most important step towards enhancing the value attached to native plants as an addition to the garden, we will now proceed to the consideration of the next matter that we have proposed to treat upon in the present article—their capacity for improvement. And here we have to regret that, whilst the florist has been assiduously directing his skill and knowledge to the acquirement of an improved race of flowers, by mingling the characters of different plants with a view to concentrate various desirable properties in one plant, there have been in comparison but few attempts to improve the wild productions of our own country. It is true they have not been wholly neglected; but hybridizing has been confined almost exclusively to those kinds which manifest a decided tendency to sport naturally, and even since the process of artificial fertilization has been so much more fully understood and effectively practised on plants before unthought of, the attempts with native species have still been rare.

We are far from believing, however, that the art of hybridizing and cross-breeding is yet but partially developed in regard of the extent to which it is practicable. The barrier at first placed to its range has already in some instances been broken down, for we are now in the possession of varieties produced betwixt plants of different genera. It seems reasonable to infer from this that the species of several allied genera may be induced to mix, especially such as belong to Labiatæ, Leguminosæ, Lobeliaceæ, and other natural groups, the genera of which possess many remarkable traits in common. And should the inference, that this capacity may ultimately be found to exist more extensively, be substantiated, a vast field will be opened for exertion, especially with a view to combine the showy characters of some of the inmates of our greenhouses and stoves, with the hardy nature of indigenous kinds. But waving the matter of mingling plants of different families, if we confine ourselves merely to uniting species of the same genus, we shall find much room for enquiry and experiment, and with increased probability of success. We do not, however, mean to assert, that any two species even of the same genus may be joined in this manner, for the repeated trials of the florist have hitherto been baffled with many, and a question consequently attaches itself to the circumstance. Failures are not always evidences of the impossibility of a thing; much needful data may be wanting to ensure a successful result.

In urging our plea for the attempt to concentrate the hardihood of native plants with the showier flowers of their more tender kindred, we shall perhaps be better understood if we adduce a few exemplifications. Our moors and mountains furnish us with two pretty plants, which produce seed plenteously, and are often admitted to the garden, the *Erica Tetralix* and *E. cinerea.* Now, varieties raised between different kinds of Cape Heaths are far from uncommon, and there is no apparent obstacle to prevent the production of varieties combining the hardier character of our example with the more specious qualities of some of the latter; and thus in process of time, confer on our pleasure-gardens an interminable diversity of novel and interesting hybrids. The *Linum anglicum* may probably unite with *L. trigynum;* the brilliant-flowering *Veronica Chamædrys* may be tried with the *V. speciosa,* to obtain a better foliage; the little *Oxalis acetosella* with the *O. Bowieana;* the prostrate *Antirrhinum cymbalaria* with its more gaudy congeners; the *Primula farinosa* with *P. prænitens;* and we are aware of no impediment that should hinder the production of a Water-Lily partaking of the splendour of the *Nymphæa rubra,* or *N. cærulea,* and the loveliness of the common species that floats on our lakes and ponds.

These instances, taken almost at random, may serve to indicate the kind of improvement of which we conceive British plants capable, by fertilizing their seeds with foreign kinds. And many others, perhaps more appropriate, will doubtless at once present themselves to the mind of the thinking culturist.

Although we have here limited ourselves to a consideration of the improvement that may be effected in British plants, the practice involved in the preceding observations is capable of producing an extensive melioration amongst hardy plants generally. But it would be foreign to the intention of the present paper to embrace a more excursive range; we will now, therefore, proceed to other conditions capable of influencing the appearance of British plants.

It must be obvious that when a plant is surrounded with grass or choked up with an intricate mass of other vegetation, it can hardly acquire more than the tithe of its real intrinsic excellence. And when divested of weeds and furnished with a kindly soil, prevented from acquiring coarseness by complete drainage, and other inducements to keep the roots near the surface, pegged to the ground, or otherwise secured so that the flowers may be conspicuously prominent, it is surprising what an alteration is brought about in the power of contributing to ornament.

As a general maxim, all excess of manure should be avoided, at the same time employing a moderately rich soil, or the flowers of many plants will be inferior in size. Leaf-mould should be awarded in preference to dung, as the latter promotes a rank luxuriant vegetation, rather than the perfection of a flowering state; and if with this a portion of turfy peat earth be incorporated and the whole added to a common garden soil, observing to secure a dry bottom to the border, and never to make it deep, little fear need be entertained of the production of superfluous vigour. Such a compost will supply the necessary amount of food to the majority of species suitable for a garden; but it must still be remembered that certain kinds may require a treatment peculiar to themselves, to the nature of which their native haunts will usually afford a satisfactory index.

The only other point which we shall at present notice is the conspicuous advantages procured, by thinning the flower-beds when excessively abundant, removing decayed flowers, and the rudiments of seed. Although it may appear somewhat paradoxical to speak of ameliorating the appearance of a plant by removing a portion of its flowers, yet such in reality is the result with a large proportion of species. The abstraction is more than atoned for by the greater size of the remaining blooms, and the undisturbed health of the specimen, which enables it to continue flowering for a longer period. And nipping off the decayed flowers, and preventing the formation of seed, are beneficial in promoting the same end.

We now come to consider briefly the manner in which British plants should be introduced to the pleasure-garden. When the arrangement of a garden will permit, we are decidedly more favourable to devoting a separate portion expressly to the purpose, than to intermixing them with exotic species. There is, however, no real or weighty objection to the latter plan, where none but the more showy kinds are employed, and these are favoured with all the aids of judicious cultivation. The plea urged against them, that they evince a common or a weedy appearance, will then be superseded through the improved aspect communicated by disposal and management; indeed, it is a generally recognised fact in the popular system of decorating the pleasure-grounds, that masses of many of the commonest flowers create the most showy effect. We allude now of course only to the extensive garden scene, and not to the limited flower-garden where an assemblage of all that is gay and beautiful, and individually interesting, is expected.

The chief arguments in favour of a separate department for native species, are the unique appearance with which they invest such a spot, and the greater facility it affords for adopting any peculiarity of treatment. And let it be remembered, that in all cases groups or beds of the same plant prove more showy than a heterogeneous mixture of various kinds and colours: the latter have always a meagre and spotted appearance. And surely a garden with groups of every bright colour on the lawn, the rockery, and the lake, with all the usual adornments conferred by bushy shrubs and climbing species consisting entirely of the choice production of our fields and groves, cannot fail to elicit a share of pleasure and approbation proportioned to the care expended on it, even though the cherished beauties be the natural offspring of our own mother-land.

PROPAGATION OF FLOWER-GARDEN PLANTS.

THE increase of the class of plants in question is so easily effected by cuttings, and almost at any time, that there are few who, from having some experience in raising such things, and finding it so easily accomplished, could be found to admit there is anything to learn upon the subject. Without staying to combat such a notion as this, we will proceed with our paper, which has for the foundation of its subject the fact, that, notwithstanding the facility with which any plants are propagated, there is an essential difference between doing so in a proper manner, and at a proper time, and the reverse practice.

The kind of plants we have under consideration, are all the half-hardy and tender things which now occupy our flower-gardens in summer, and their increase as it is effected by cuttings. Some, instead of taking cuttings of many of those plants which, as they grow along the surface of the soil, strike roots into it from the joints and under-sides of their stems, take part of these stems, with their roots attached, and pot them; but as such never form good plants, and as, indeed, it is only practised where necessity compels a resort to it, no further remark in reference to doing so is called for here. The time for choosing cuttings, which, in the case of plants of ascertained value, and of which there is required annually a certain supply, and that should, instead of the period when they are taken being a matter of accident, and subject to circumstances, be chosen when they will most easily root, should be sufficiently soon to enable the cuttings to form good substantial plants. Imagining they are to be selected from the beds of the flower-garden, the time when the best may be had, and when they can best be spared, is a period of five or six weeks from the time of the appearance of this in print. It is not asserted the kind of cuttings best to be chosen can then alone be found, but it is insisted upon, then is the proper and best time to choose them for our purpose, more because there is a considerable period required to enable the plants to become established and hardened against the winter than for any other reason. The kind of cuttings to be selected are such as embodies within the least compass the greatest amount of living principle ; shoots as nearly resembling young plants raised from seed as can be found: abundance of this description are, at the season in question, to be met with, rising as suckers from the base and shooting from old stems of plants turned out. Why such are best to be taken is obvious enough ; as they are, it may be said, from the heart of the plant: they possess a greater share of its energy and strength than other shoots, therefore are they better able to endure the dreary winter ; and in employing them there is the additional advantage, that, under any circumstances, they are the readiest to emit roots. The modern method of choosing those shoots of plants least succulent, and which are most likely to possess the germs of inflorescence, except in certain instances, is of no utility if carried out in selecting those of the plants in question.

The circumstances under which plants, when they are raised, are to be preserved through the winter affect the way in which they are struck, though it does not interfere with the time when the cuttings are taken, or render it less necessary to obtain good plants. If they can be accommodated in the most favourable manner, that is, allowed all the room they require, in the most suitable situation, there is nothing more required after they are rooted than to pot them, ready for turning out when the period arrives. But, if in the other extreme, so little accommodation can be afforded for them, that their preservation and welfare, as compared with other plants, becomes of secondary importance, the manner in which they are placed to root is of different consequence. Having seen the proper time to choose cuttings, and the proper kind of cuttings to choose, the manner of inducing them to become plants next presents itself for consideration : this should always be done in that way which least excites and exhausts the living principle of the cutting. It is an over-sight, and "killing by kindness" principle to place the cuttings in too warm a place to root. The effect upon them invariably is, a quick emission of roots, and also a rank and exhausting growth, with no part of their organisation maturing as it increases; hence the plants so raised are, in the first place, in tenfold degree more difficult to preserve in winter, from their weakness and consequent liability to be destroyed by cold and damp; whereas, if struck in a proper temperature, where they can be induced to form roots and mature without becoming exhausted by immature and unprofitable development, they are infinitely more valuable, both as regards their capability to endure cold and other hostile influences, and are also certain to be more serviceable eventually.

All that is required to induce the whole of the hardy plants necessary to our flower-gardens—cuttings of them being chosen as before directed—to strike, is, to favour them with a cool, close, and moist atmosphere, such as a hand-glass under a North wall, or a common frame on an old spent dung-bed, when well shaded, would furnish, and even this is required but a very short period. The same may be said of such things as *Pelargoniums, Verbenas*, &c.: the latter we have propagated in a cold frame, stuck in a cutting-pot in the ordinary way, and occasionally shaded by a garden mat; and the former by thousands annually, when stuck all over the surface of an old cucumber or melon bed, without the least shelter from the blazing sun: under these circumstances, when well supplied with water, it is astonishing in how short a time, and what useful plants, can be raised. Of half-hardy plants there are many, of which the two mentioned are typical, that can be raised in an exactly similar manner; but in this, as in every case, it is well to avoid a resort to extremes, by which we mean that while we would always raise *Pelargoniums* in the manner those just instanced were raised, and while many things, *Verbenas*, &c., could be raised similarly, we would yet give the latter a little warmth, because they would be so much benefited by it. To *Heliotropes, Salvias, Senecios*, &c., the same condition is quite requisite; so also is it to such things similar in point of hardiness, but more delicate in other respects, to *Nierembergias, Anagallises, Lobelias*, &c.

The degree of warmth required, is that only sufficiently strong and moist to support the cuttings till they begin to root. Where cuttings can be permanently potted off as soon as they are sufficiently rooted, they may be properly struck in as wholesale a way as possible. But where, from various causes, such a plan cannot be carried out, they may be struck in the pots, pans, or boxes they are intended to be preserved in, arranging the media for their roots accordingly, and putting in abundance of cuttings, to permit them to be well thinned out as their increase in size require it; or strike them in the most convenient way, and afterwards prick them into the pots, &c., above mentioned. Generally, though, from necessity alone, the last method of keeping flower-garden plants is adopted. We have said nothing of the kind of soil or composition of material for placing the cuttings in, taking it for granted that it is sufficiently well known that the medium for the roots of cuttings as well as plants under such circumstances, cannot be of too sterile a nature, so that it is sufficiently good to effect the purpose desired to be attained.

We cannot too much endeavour to fix attention upon this subject, for the practice of rearing flower-garden plants, either from cuttings or seeds in any manner, because they are so easily raised, and under the impression that it is of no consequence, is altogether indefensible. The custom of doing so causes, at least, a very unnecessary outlay of trouble and labour, to say nothing of the chances of loss from cuttings not striking, and the difficulty of preserving them as plants when they have been improperly struck.

FLORICULTURAL NOTICES.

NEW OR BEAUTIFUL PLANTS FIGURED IN THE LEADING BOTANICAL PERIODICALS FOR JULY.

AZA'LEA OBTU'SA. An introduction of Mr. Fortune's, who sent it from Shanghae to the garden of the Horticultural Society, where it was received in the summer of 1844. The Journal of the Hort. Soc. has the following respecting it:—"This charming shrub may be regarded as the gayest of all the red Chinese *Azaleas* in cultivation. It is a little bush, with very blunt leaves, both smaller and narrower, in proportion, than we find upon the species already in our gardens, and also smaller flowers, of the most glowing red. The latter have uniformly five stamens only, the characteristic mark of the genus *Azalea*, and thus seem to show that the additional number hitherto remarked in the Chinese species is a mere result of cultivation. The segments of the corolla are nearly oval, and sharp-pointed; the upper one is not much smaller than the others, and is faintly blotched with purple."—*Bot. Reg.*, 37.

BEGO'NIA ALB'O-COCCI'NEA. "It has already been proposed to separate from *Begonia* the genus *Eupetalum*, founded on the *B. petaloides* figured at fol. 1757 of this work, and *Diploclinium*, distinguished by its large double placentæ. These are, however, mere indications of structure, and have yet to be applied to the great mass of species belonging to the order. We are ourselves without the leisure to prosecute the inquiry, and therefore we make no attempt, on the present occasion, to determine whether this may not be a species of *Eupetalum*; but we republish it under the name already given it by Sir Wm. Hooker. It was first raised in the Royal Botanic Garden, Kew, from seeds said to have been obtained from the East Indies (India), by a gentleman at Twickenham, and has thence been extensively distributed. Few, if any, of the order excel it in brilliancy; nor, indeed, is it easy to point out so lively a contrast of colour as that afforded by the vivid scarlet of the outside of its bivalve calyx, and the snowy interior of that organ and the petals."—*Bot. Reg.*, 39.

CA'TTLEYA LEMONIA'NA. This Dr. Lindley considers a new and distinct species, but Mr. Booth the author of its specific name, gardener to Sir C. Lemon, Bart., thus speaks of it:—"That this is a variety of *Cattleya labiata* I think there can be no doubt, however different it may appear in the form and colour of its flowers, from those of the original species, and of the other varieties of it which have yet been published; but it certainly does not appear to me to possess any peculiarity of sufficient importance to warrant its being kept *specifically* distinct, and I have therefore merely characterised it as a variety, and dedicated it to Sir Charles Lemon, Bart., M. P., already well known for his attachment to this singular tribe of plants, and who has the merit of first introducing it." It was imported from the Brazils in 1842, and first flowered in September of last year.—*Bot. Reg*, 35.

DAVIE'SIA PHYSO'DES. "A very singular species of the very pretty genus *Daviesia*, in habit, as Mr. Bentham well remarks, resembling *Genista Scorpius*; but why named *physodes* by Mr. Cunningham is not apparent; for (unless it be in the fruit, which is, however, not noticed by Mr. Cunningham) there is nothing inflated or bladdery about the plant. The whole is rigid and glaucous, the lower leaves often small and terete, the upper ones oblong and obliquely cuneate, so that the shape a good deal resembles a hatchet, more dilated at the upper angle, mucronate on the other, and marked with two nerves on each side. The flowers are exceedingly handsome, variegated with several colours—orange, red, green, and black, produced copiously on the branches; and they continue a long time in perfection, so that the plant is highly ornamental to the greenhouse in the months of April and May. It is a native of Western Australia. The precise locality where Mr. Cunningham discovered it is not recorded; but Mr. Drummond and Mr. Preiss have detected it in the Swan River settlement, and from seeds sent by the former of these two botanists our plants were reared, at the Royal Gardens of Kew."—*Bot. Mag.*, 4244.

EPA'CRIS DU'BIA. "When this plant was first sent to us by Mr. Jackson, Nurseryman, Kingston," Dr. Lindley writes, "we mistook it for *C. heteronema*, but the leaves are far narrower, are not merely slightly three-ribbed at the base, but plainly so throughout their whole length, and above all, they are terminated by a blunt callus, and not by a slender spine. Nor is it *C.*

paludosa, for its leaves are not acerose, nor are the lobes of the corolla large and rounded. Nor is it *C. obtusifolia*, for it is not slender enough, nor are the leaves abruptly blunt, nor is the calyx ciliated. Since, then, it is neither of these species, and since no others have been described with which it is comparable, we are forced to regard it as new. But is it a wild species ? or is it one of those endless garden hybrids which are becoming now so common, as to threaten that garden botany shall have to be studied upon principles unnecessary and unknown in wild plants ? That is a point which we are unable to answer. In this embarrassment we give it a 'local habitation and a name,' and nothing more."—*Bot. Reg.*, 38.

GESNE'RIA BULBO'SA, *var.* LATERI'TIA. "I much fear," writes Sir William Hooker, "that the *Gesneria faucialis*, Lind., (*Bot. Mag.*, t. 3659), and the *G. Suttoni*, Lindl., (*G. bulbosa*, *nob.* in *Bot. Mag.*, t. 3041), should be united with *G. bulbosa*, which is evidently a highly variable plant, and one that has apparently an extensive geographical range, extending from Brazil to New Grenada. In the latter country, about Santa Martha, the present singular variety of this species, for such I take it to be, was detected and sent to Kew by our collector, Mr. Purdie. It first produced its blossoms at Sion House, under the skilful management of Mr. Carton. At first sight it is distinguished from the true *G. bulbosa* by its pale brick-coloured flowers, and by the drooping racemes. The arrangement of these flowers, in the raceme on simple pedicels, would rather induce me to refer this to *G. faucialis* than to *bulbosa*, could I persuade myself they are really distinct ; but, as far as I can find, the leaves and flowers are alike in both, and the only difference discernible is in the large and more divided raceme or panicle of the true *G. bulbosa*."—*Bot. Mag.*, 4240.

GESNE'RA ELLI'PTICA, *var.* LU'TEA. "We have here," Sir W. Hooker states, "the pleasure of figuring another *Gesnera*, one of the results of Mr. Purdie's mission to the mountains of St. Martha, New Grenada. The flowers of this species, however, exhibit much variation in hue, and we have chosen the most unusual of these colours in the genus, namely, yellow. Others are brick-coloured, and some bright red. All are graceful in their growth, and handsome in their blossoms. As a species, it will rank near *G. rutila*, Lindl., Bot. Reg., t. 1158, and especially that variety of it afterwards given at t. 1279 of the same work, and called, var. *atrosanguinea* ; but the shape of the upper part of the corolla, and the relative size of the lips, afford distinguishing characters. It flowers in a warm moist stove in May, and through most of the summer months."—*Bot. Mag.*, 4242.

LEIA'NTHUS UMBELLA'TUS. "A rare and little known species, handsome in its habit and its ample foliage, and singular large involucrated umbels of flowers, but these last are wanting in colour to render the plant a very striking one. It is a native of Jamaica, and seems to have been unnoticed by any one till my excellent friend, Dr. Macfaedgen, transmitted dried specimens some years ago, and more recently, (in 1843,) our collector, Mr. Purdie, has sent both specimens and seeds to the Royal Gardens in Kew. The latter were reared, and produced fine flowering plants. It is a mountain plant, which Swartz gathered in the Parish of St. James ; and Mr. Purdie, on the summit of the Dolphin, Hanover, where this noble species attains a height of twenty feet. It flowers in May, and succeeds best in a hot moist stove heat." *Lisianthus umbellatus* is a synonyme.—*Bot. Mag.*, 4243.

PITCAI'RNIA UNDULATIFO'LIA. "A native, probably, of Brazil, but of the history of which we know nothing, save that it was sent to the Royal Gardens of Kew from Liverpool, by our obliging friend, Mr. Shepherd, under the name here adopted. It is a very showy plant, and no stove collection should be without it. The leaves are handsome, and of a light green ; the lower bracteas are furfuraceous below, red, tipped with green ; and the long protruded corollas are quite white. It flowers in May, and easily bears parting at the root."—*Bot. Mag.*, 4241.

ROY'ENA LU'CIDA. "It is not a little remarkable that this fine old greenhouse shrub should not have found a place in any English collection of coloured plates, yet it is said to have been introduced in 1690, and has probably never been lost to cultivation up to the present day. It is a native of the Cape of Good Hope, whence it was imported by the Dutch, among the earliest productions of their South African colony. The berry is said to be red and fleshy, like an apple, and about as large as a damson. For this reason, the species has had the reputation of being a fruit tree, to which it has no better title than our own Hawthorn. It, however, represents a natural order, in which the seed-vessel of a few species becomes eatable when bletted, as occurs in the Chinese Fig, or *Diospyros Kaki*, and the *Lote* trees of Europe and North America." Synonyme, *Staphylodendrum Africanum*.—*Bot. Reg.*, 40.

Sarcoste'mma campanula'tum. A shrubby greenhouse climber, supposed to be a native of Peru. "Its broad cordate leaves and large yellow campanulate flowers are strikingly different from those of other previously described *Sarcostems,* to which M. Decaisne reduces the Philibertias, more especially the base of the leaves being very deeply heart-shaped, with the lobes almost overlapping, is very different from what is found in *S. solanoides* and *grandiflora.*"—*Bot. Reg.*, 36.

Theophra'sta ju'ssiæi. "A stately unbranched plant, with something of a *Palm*-like habit, the upper part being comose, or crowned with a tuft of leaves, and bearing in the centre of those leaves a pretty large cluster of good-sized flowers. Few have had the opportunity of studying this, save from dried specimens, yet it has occupied the attention of some of our ablest botanists, and is considered worthy (by Don and De Candolle), in conjunction with *Clavija* and *Jacquinia,* and two or three less known genera, to form a distinct order, *Theophrastaceæ,* allied on the one hand to *Myrsinaceæ,* on the other to *Sapotaceæ.* Our present species, and the only known one of the recognised, is a native of St. Domingo, and of course requires the heat of a stove to bring its blossoms to perfection. The fruit, so far as I am aware, does not ripen in our collections, but is well represented, from dried specimens, by Dr. Lindley, in the figure above quoted." *Theophrasta Henrici* and *T. Americana* are synonymes.—*Bot. Mag.*, 4239.

NEW OR INTERESTING PLANTS RECENTLY FLOWERED IN THE PRINCIPAL METROPOLITAN NURSERIES AND GARDENS.

Achime'nes Lie'pmannii.—This differs from *A. grandiflora* in being rather more slender growing, in having much less broad leaves, and very much more vivid and paler flowers, without the large whitish blotch at their throat, which is conspicuous in those of that species. The Messrs. Henderson, of Pine-apple Place, had a fine plant in bloom, at the last exhibition of the Royal Botanic Society, and we have since observed it at the Horticultural Society's Gardens.

Æschyna'nthus Boschia'nus.—A very interesting species, with slender trailing stems, oval or ovate, opposite leaves, and bearing numerous large axillary and terminal clusters of dark scarlet flowers, which have a deep greenish-purple tubular calyx, and large tubular curved corolla, with a four or five-cleft limb, and a whitish blotch at its throat. It is allied to *Æ. pulcher,* first flowered, early in the year, in the collection of R. G. Lorraine, Esq., Wallington Lodge, whose gardener exhibited a plant in bloom at the recent Chiswick Show, as also did the Messrs. Henderson, of Pine-apple Place; their plant was also at the Royal Botanic Society's last show.

Æschyna'nthus.—Among other new plants sent to the last Chiswick Exhibition, by the Messrs. Veitch, of Exeter, was a member of this genus, having acuminate, opposite leaves, purple on their margins and at their apex. The flowers are produced in terminal clusters, have a deep tubular dark-coloured calyx, densely beset with short, white, bristly hairs, and a corolla of a dull crimson colour, covered with hairs of the same hue, similar in their nature to those of the calyx. It is a deserving species, with fine foliage, resembling also, in general character, *Æ. pulcher.*

Calyste'gia pube'scens.—This is a Convolvulaceous plant, with large, double, pale lilac flowers, one of Mr. Fortune's introducing. It is a very ornamental greenhouse climber, with sagittate alternate leaves, and axillary flowers, which are borne all along its twining stems in great profusion. We first observed it in flower at Messrs. Rollisson's, Tooting, and plants in bloom have since been sent to the Regent Street Rooms, and the last exhibition at Chiswick.

Cu'phea corda'ta.—Messrs. Veitch had, at the recent Chiswick meeting, a fine specimen of this plant, gay with its wholly scarlet flowers. It is free growing, and has ovate leaves, and rather large panicles of flowers.

Cle'matis glandulo'sa.—This is a fine climber, with strong-growing stems, which are purple at their joints, and cordate, opposite, large, green leaves, and very numerous short racemes of flowers, on long peduncles, dark purple and white. The interior portion of the flower is of the latter colour, and the sepals are dark purple on their insides, and greenish-brown on their outsides. We learned from the Messrs. Veitch, whose importation it is, and who sent it to the recent Chiswick exhibition, that they have it doing well in the open air, where it may be expected to become a valuable summer climber, if even it does not prove hardy.

Dendro'bium.—Mr. Mylam, gardener to S. Rucker, Esq., Wandsworth, had in his collection of *Orchids*, at the last Chiswick show, a member of this genus, in general character resembling *D. aduncum*, with broad blunt leaves, and short racemes of flowers, of very light texture, in colour French white tinged with pink, with very broken-margined petals, and a much undulated lip, broadest at the apex.

EVOL'VULUS CÆRU'LEUS, *and* PURPU'RO-CÆRU'LEUS.—Mr. Carton, gardener to His Grace the Duke of Northumberland, at Sion, sent to the Regent Street Rooms of the Horticultural Society, at a recent meeting there, each of the above plants, in bloom; they are dwarf growing, with slender branches, and very small leaves. The colour of their pretty flowers is what their names indicate, and they are borne along the upper part of the branches singly, or on short shoots, three or four, or more, in a cluster.

EPIDE'NDRUM.—In the collection of Orchids already referred to, Mr. Mylam had a species of this genus, with pseudo-bulbs and leaves similar to those of *E. macrochilum*, and bearing fine panicles of flowers, whose sepals are linear, whitish, with somewhat linear-lanceolate petals, of a similar colour, and an oblong lip, much crumpled and broken up at the margin, blotched and spotted with pale purple, but most strongly so at the base.

GALEA'NDRA.—In one of the stoves at the Hackney Nursery, a species of the above genus with flowers somewhat intermediate between those of *G. Devoniana* and *G. Baueri* has been in bloom. It has slender pseudo-bulbous stems, which are thickest in the middle, and have graceful, long, narrow, lanceolate foliage. The flowers are borne in a similar manner to those of the species mentioned, and their sepals and petals are like those of *G. Baueri*, but the labellum is large, and forms a large, rather flat tube, which terminates abruptly, and then sends out its spur. The prevailing colour of the labellum is brownish-white, with a blotch of brownish-purple at its throat.

IXO'RA.—A new species of this fine genus was exhibited at the late Chiswick Show, by the Messrs. Veitch. It has broadly-lanceolate, opposite, pale green leaves, and produces its flowers at their axils, and terminally, very freely, in semi-globular corymbs. The colour of the individual flowers varies in a manner which renders the whole very lively. The young, just expanding ones, wear a golden hue, while those which are perfect, and which constitute the majority, are a creamy-rose colour, and those fading are stained with pink. It is a highly ornamental plant, and is an importation of the above gentlemen, through their collector, Mr. W. Lobb.

ONCI'DIUM.—The Messrs. Rollisson have flowered a new and delightful member of this genus. It is a Brazilian species, and has rather small oval pseudo-bulbs, and short oblong sanguineous leaves; a flower-scape rising eight or ten inches, with a raceme of six or seven flowers on its upper portion. The flowers are large, have oval sepals and nearly circular petals, the prevailing colour of both being light brown. The lip is large and very beautiful, approaching a semicircular form, with black-red markings at its base, the ground colour deep yellow. Parallel with its outer edge is a broad lacing of pale brown, which renders it very striking and novel. The plant blooming is very small, so that it may be expected to prove quite a free flowerer; a considerable addition to its other merits.

STYLI'DIUM SCA'NDENS.—Messrs. Low, of Upper Clapton, sent to a recent meeting of the Horticultural Society, in Regent Street, a species of *Stylidium*, which Dr. Lindley considered *scandens*. The plant was about a foot high, with an erect stem, bearing numerous whorls of long, linear leaves, which curl up at their apex, and a small panicle of bright rose-coloured flowers, immediately beneath which a new growth of several shoots had commenced, thereby indicating its climbing character.

TORE'NIA.—At the Nursery of the last-mentioned gentlemen, a species of *Torenia*, with cordate, petiolate, serrated, opposite leaves, and flowers which are borne at their axils, similar in shape to those of *T. asiatica*, but different in colour, has recently flowered. The flowers have a dark tube, and a four-cleft spreading limb, of a blue-lilac colour.

OPERATIONS FOR AUGUST.

Now that the business in the various floral departments, as far as present effect is concerned, has become chiefly of a routine character, we are at liberty to, and must of necessity, turn our attention to the future, by commencing to propagate. This is particularly the case in the out-door floral department, where propagation has chiefly to be effected by cuttings ; for detailed methods of treating which, see the article in another page. Stove and greenhouse plants necessarily do not require increasing to a great extent ; under ordinary circumstances, little difficulty is experienced in producing the requisite number from cuttings, if the well-known conditions essential to success are at hand. The majority of the former are amongst the most simple and easy things to strike ; the reverse, though, is the case with the latter. Perseverance with them will do much, but extensive success can only be attained by long experience ; hence the inutility of going into the practical detail of the various methods pursued. The facility with which *Roses*, innumerable shrubs, deciduous and evergreen, increase by layering now, should be taken advantage of ; budding, also, may be extensively practised. Neither must the numerous plants we annually raise from seeds be forgotten at this season. Where seed-saving is practised—and there are few places that under some circumstances, and to a greater or less extent, it does not become necessary—care should be taken that the first seeds, which are the finest, are caught before they become shed or otherwise lost. The diligence with which this direction is carried out will, of course, always depend upon the kind and quantity wished to be saved. The kind, again, is also the best guide as to the disposal of the seeds after they are gathered. Biennials and perennials should have their seeds sown as soon as they are ripe, in a manner suitable to their nature, while annuals have simply to be placed away, except it is wished to raise quickly, and have them in flower. Regard must be had that none are stored away before they are properly ripe and dry, or loss and disappointment will be the consequence.

The stronger-growing herbaceous plants, occupying shrubbery borders, such as *Hollyhocks*, *Phloxes*, &c., may now have their main flower-stems permanently disposed, and secured to suitable supports ; this cannot be too effectually done, arranging them in as free and characteristic a manner as possible. Their superior appearance, when so dealt with, will well repay the extra care taken with them, and further, they become much finer, and fully develope their lateral branchings. Here, too, the masses of, or individual shrubs, require some attention to keeping them in proper bounds, and, by removing over-luxuriant branches, preserving uniformity. This direction may be very extensively applied ; all the various ornamental shrubs and trees may be examined, with a view to its being practised where necessary. Plants, as they go out of flower, on borders, must have their old flower-stems removed and the plants lessened in bulk if requisite. Those coming into bloom must be duly supported and trained, and patches of annuals may have some of their shoots cut back, and part of their flowers removed, to induce them to continue longer in perfection. *Dahlias* cannot now be too well tended, thinning and tying their shoots, lessening the number of their flower-buds, &c., to insure fine blooms. Arbours and *Ivy*-covered objects will begin to require that their coverings receive the usual trimming. But, instead of using the garden shears, and proceeding as is commonly done, we would strongly recommend the knife alone to be used, especially in conspicuous situations ; going over the whole with patience, removing all strong shoots not wanted altogether, and shortening back those that require it. The superior effect, the result of such a proceeding, is ample reward. Attend to all kinds of *Roses*, every description of climbing plant, &c. according to directions of last calendar. The occupants of conservative walls now require carefully treating, thinning, fastening, and disposing so as to display their beauties, and enable them to develop their flowers in a free and natural way. Very much of the fine effect of these grand accompaniments of the flower-garden depends upon the treatment the plants which occupy them experience.

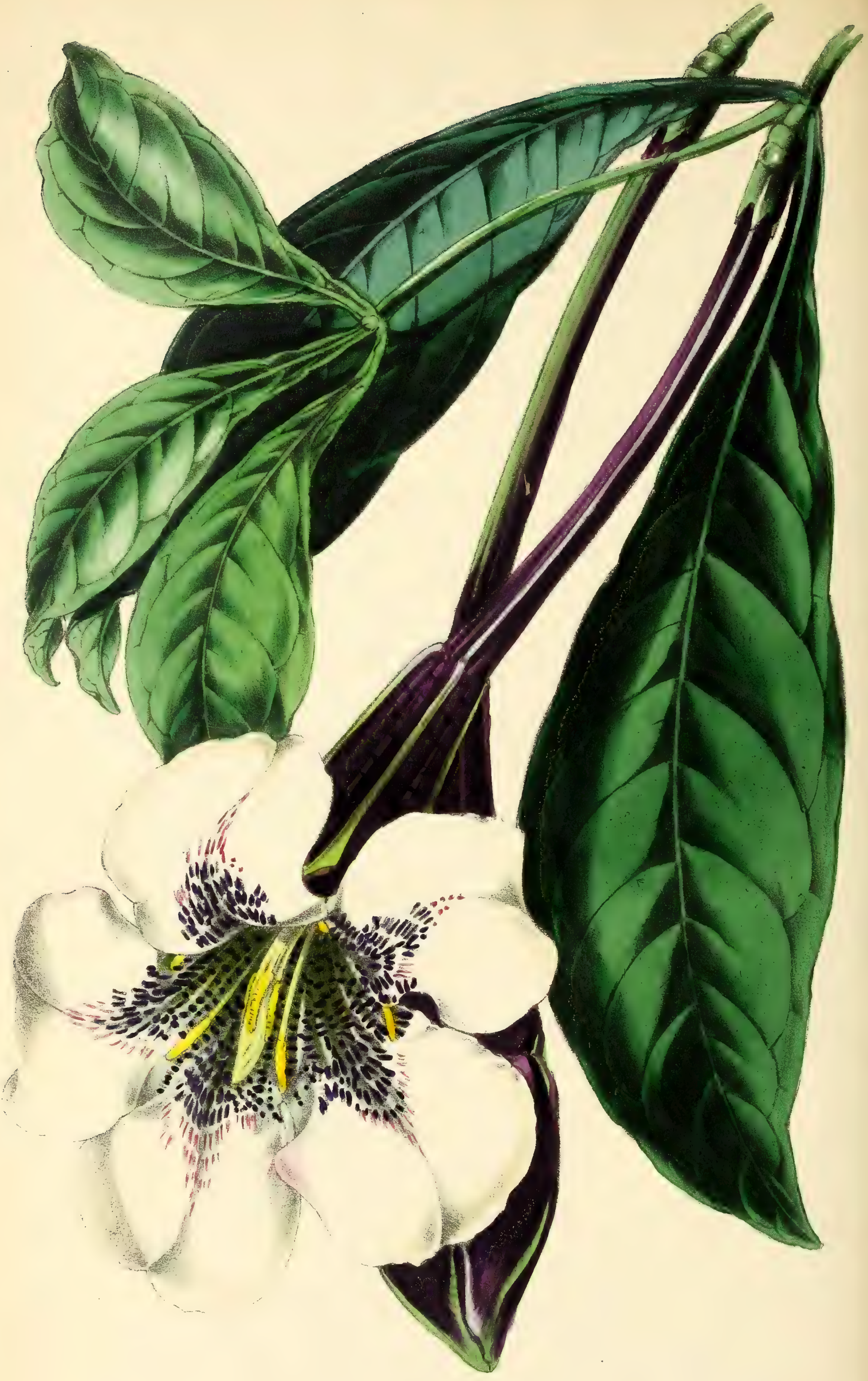
In the parterre, the *Box* edgings will require neatly clipping ; the various beds must have the plants with which they are filled regularly gone over, preserving them within proper limits by shortening back the under and longest shoots, leaving others to fall into and occupy their places, and all decaying flowers and their stems removed. Annuals should have their seed-vessels continually plucked off, and as the plants become shabby and exhausted, they must be superseded by suitable ones, from the reserve and succession store.

In the plant-houses, and among pot plants generally, the chief business is to favour each plant, as it ceases to grow, with a situation where it can gradually but effectually become matured and hardened. In miscellaneous collections this becomes rather a difficulty, but not so great a one as at first sight appears. It is necessary, as far as possible, to have those plants which are growing separated from those which are ceasing to do so, and it should be the aim to have as few growing as possible. A close cold pit affords fine accommodation for the latter, in clear sunny weather; such a receptacle devoted to the smaller greenhouse plants which may be growing, and as well those from the stove, various *Cacti*, &c., much would be done towards permitting the inmates of the principal houses to be favoured with the full volume of light, and the admission of all air, it may be both night and day. To such plants as are still making active growth, warmth, moisture, shade, &c. must still be insured. Beyond not using any more water than plants necessarily require on their own account, it is very advisable to throw as little as possible about houses, that they may have an opportunity of becoming quite dry before winter. And further, it is an excellent plan to employ soon enough a little fire heat, to get the flues and houses dry while there is sun, and while air can be admitted to aid in doing so more effectually. The same principle of proceeding should be extended to all permanent erections, which are meant to hold plants through the winter, however rude their nature. It may be effected in cold pits, and other less effectual protecting receptacles, by simply keeping them closed, and sheltering them as much as is convenient from wet.

The *Orchidaceæ* require minutely regarding; very many specimens will bear removing to the comparatively dry stove, others to the greenhouse, &c., until the chilly and moist weather of autumn sets in. Shade and moisture must begin to be gradually but sensibly withdrawn from the general collection, and water more sparingly administered. The large-leaved *Oncidiums* and all the more succulent genera and species must be very cautiously watered. *Stanhopeas* may have a good supply of moisture, and they will be greatly benefited by bottom-heat, as soon as they begin and as they continue to grow. Flowering plants among this tribe, and indeed in any of the collections, should be displayed to as great advantage as possible, and every means taken to preserve their bloom. Japan *Lilies* ought to have every encouragement, by being bountifully supplied with water, afforded abundance of room, &c. Climbers inhabiting and trained to the rafters of conservatories, or other erections, and occupying any position, should now almost be left to grow as and where they like, at least all the shoots except the leading ones may, after they begin to produce their flowers.

All late-flowering plants may be treated so as to render them vigorous, and they should be encouraged to grow bushy, by pinching off the tops of their shoots; this more particularly applies to *Chrysanthemums*, annuals, &c.; the former, though, must be carefully dealt with in this respect, as it is getting late to perform the operation upon them. Plants intended for early forcing should be induced to complete and mature their growth without delay, that they may have a period of rest. *Carnations* may still be layered, as also the strong kinds of *Pinks*. Early layers of the former will be fit to take up and pot; too much care cannot be taken not to pot them in rich soil, as their ultimate usefulness is very much impaired if they become luxuriant through the winter. Struck *Pink* pipings may be potted or planted in beds.

Persevere in eradicating all weeds, and keeping everything in the best possible trim.



S. Holden, del. & Lith.

Gardenia Stanleyana.

GARDÈNIA STANLEYÀNA.

(Lord Stanley's Gardenia.)

Class.
PENTANDRIA.

Order.
MONOGYNIA.

Natural Order.
CINCHONACEÆ.

Generic Character.—*Calyx* with an ovate, usually ribbed tube, and a tubular, truncate, toothed, cleft, or parted limb. *Corolla* funnel, or salver-shaped, having the tube much longer than the calyx, and the limb twisted in æstivation, but afterwards spreading, from five to nine-parted. *Anthers* five to nine, linear, almost sessile in the throat of the corolla, or exserted. *Stigma* clavate, bifid, or bidentate; lobes thick, erect. *Ovarium* one-celled, half divided by two to five incomplete dissepiments. *Berry* fleshy, crowned by the calyx. *Seeds* minute. *Embryo* albuminous.—*Don's Gard. and Botany.*

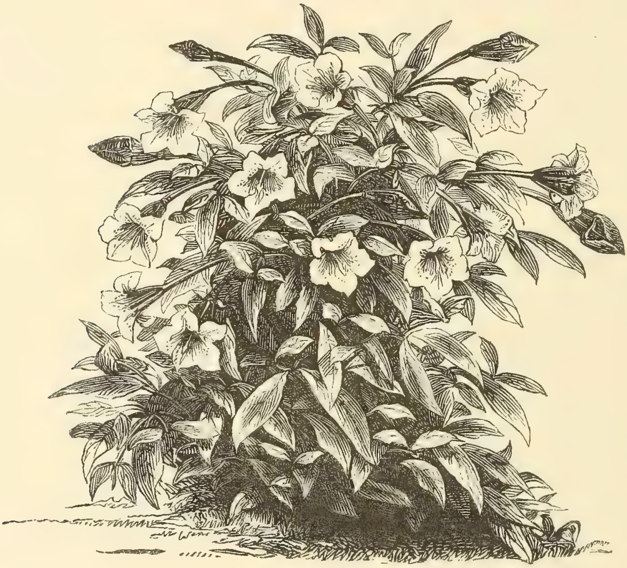
Specific Character. — *Plant* a shrub, evergreen. *Stems* unarmed, very glabrous. *Leaves* ternate, ovately-elliptical, acuminate, with short petioles. *Flowers* solitary, terminal. *Calyx-limb* five-toothed. *Corolla,* tube very glabrous, very long, increasing upwards, with a spreading limb, divided into five, obliquely-ovate, subcordate lobes.

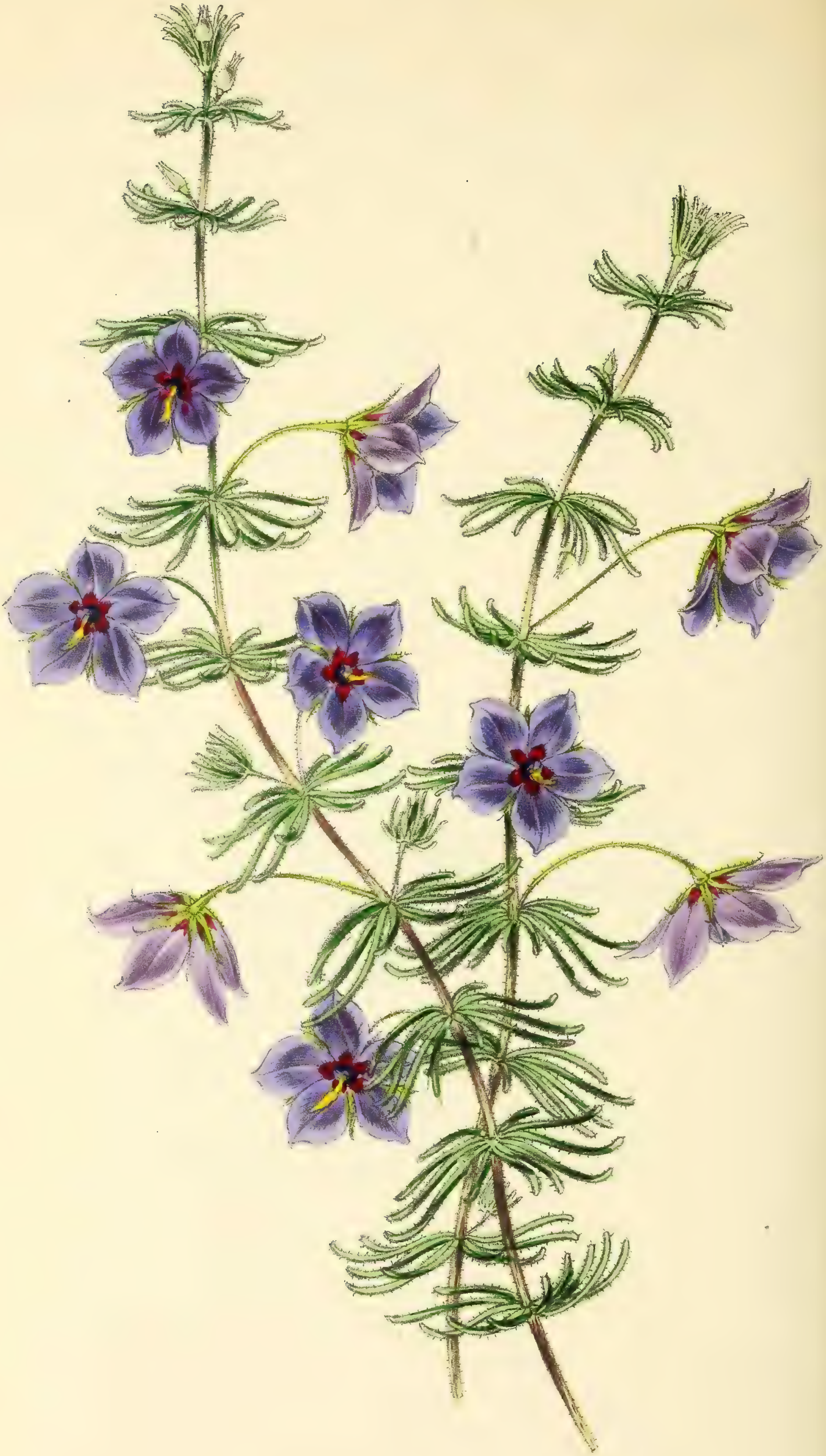
This remarkable plant is a product of Sierra Leone, in Africa; with the exact date of its introduction from thence, by its discoverer, Mr. Whitfield, botanical, &c., collector to the Earl of Derby, we are unacquainted; but doubtless it was at some preceding period near to last year, early in the spring of which it first bore flowers in this country, at Kew. Sir Wm. Hooker is the author of the title by which it is specified.

It is a most desirable plant, noble for growing in a stove conservatory, or where, in an agreeable temperature, its roots and branches would have ample space. It is not rank, or strong growing, but is remarkable for the freedom and woodiness of its growth. Its branches grow wide and spreading, and in a peculiarly horizontal manner; on their surface, at the axils of the leaves of the young terminal shoots rise the noble, highly fragrant flowers, in the most gratifying profusion. Their size and appearance would indicate that they could be produced by large plants only, but in this respect they convey an erroneous impression; for those of such dimensions as would permit their being admitted to the most limited collections flower quite freely, and that without any recourse being had to peculiar culture, to induce them to do so. The flowers also have another value, from developing themselves at different periods of the year; how far they may be distinguished for doing so naturally has scarcely yet been discovered, but their doing so at all suggests the possibility of having them frequently, when skill is employed to aid their production. And even without flowers the plant is very acceptable, its profuse, handsome, shining foliage rendering it so.

In pursuit of our usual custom, when the character of so deserving a plant cannot be sufficiently shown by a plate, we subjoin a wood-cut. Propagation is effected without difficulty by cuttings; of its management in other respects, Mr. Glendinning, of the Chiswick Nursery, to whom we are indebted for the opportunity of preparing our drawing, in the "Botanical Register" of last year, says:—"What will render this plant a great favourite is its easy cultivation. I would recommend rough peat, leaf-mould, and silver sand in nearly equal proportions; let the pots be well drained, and place a little moss over the drainage before potting, to prevent the compost from mixing with the drainage; place the plant in rather high temperature in a close house or pit, and give abundance of atmospheric moisture; under these circumstances the cultivation and flowering of this choice exotic will be certain and complete."

Ellis gave the generic name after Alexander Garden, M.D., of Charlestown, Carolina; a correspondent of Linnæus' and himself.





Tetratheca Verticilata.

TETRATHÈCA VERTICILLÀTA.

(Verticillate Tetratheca.)

Class.
OCTANDRIA.

Order.
DIGYNIA.

Natural Order.
TREMANDRÀCEÆ.

Generic Character.—See page 53.

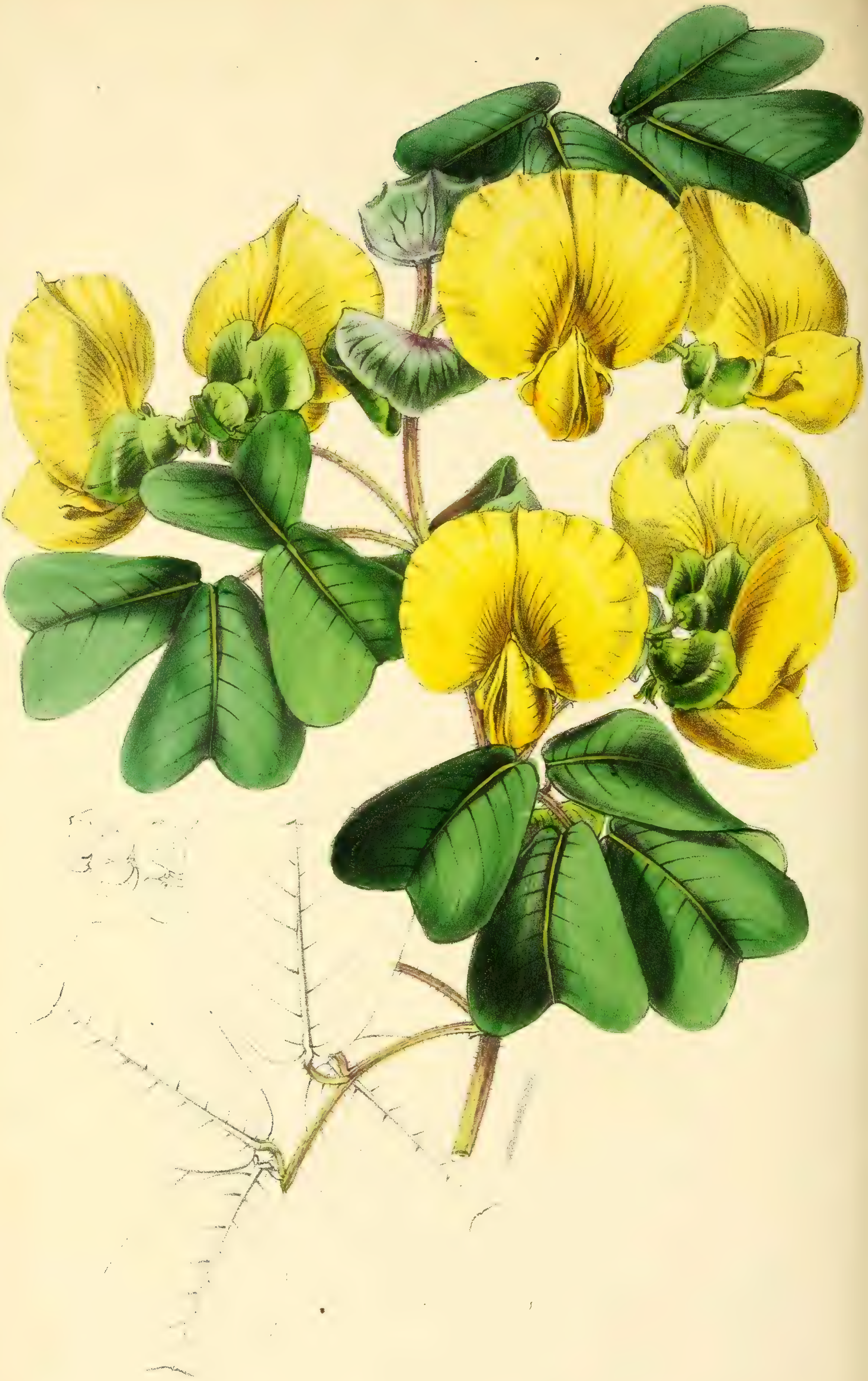
Specific Character. — *Plant* a slender-branched evergreen shrub; *branches* pubescent. *Leaves* linear, in whorls, acute, hairy. *Flowers* axillary, peduncled; *peduncles* hairy. *Calyx* divided; segments linear-lanceolate. *Corolla* polypetalous; *petals* cordate-ovate, light purple or violet, reddish-crimson at their base.

We have seldom had the satisfaction of publishing a more charming greenhouse plant; the prevailing colour of its flowers is of so delightful a description, and they are so freely produced in spring and early summer, its branches slender, and the habit of the plant elegant and quite in accordance, renders it particularly desirable. For our figure we are under obligation to the kindness of Mr. Low, of Upper Clapton; it represents the plant rather more attenuate in growth than it naturally is, scarcely in full conveys an idea of how abundantly it blossoms, and does not exactly show the real colour of the flowers; all in consequence of the plant from which it was taken having been accidentally grown and flowered in too warm a temperature.

Of the history of the species we have not much intelligence; it is new, in a flowering state, at least, to our collections this season. The plant previously spoken of was raised from seeds collected at the Swan River by Drummond, in Mr. Low's nursery, and flowered there in February, bearing the name of *Tetratheca speciosa.* Other establishments have bloomed the plant under the name of *Tremandra verticillata*, a title that has, we imagine, come with it from the collection of Baron Hugel, of Vienna. That it is a *Tetratheca* there can be no question, but as far as we are able to learn, it is an unfigured and an undescribed one. Of the origin of the specific appellation we are also ignorant, but nevertheless give the name it now universally and appropriately bears. A pleasing property distinguishing it from *T. hirsuta*, is, that its flowers remain expanded after once opening, and not like those of that species, close in the absence of sunshine.

The stream of floral attention, so to speak, has of late years, and is strongly at present diverted from the class of plants of which this is an individual, by the splendour of the *Orchid* family, and the more gorgeous, more easily managed inmates of the stove. Greenhouse plants were the glory of ancient collections, but now in the estimation of culturists generally, they scarcely occupy a second place. Fashion, the less obtrusive merits of the plants themselves, as compared with those of their contemporaries, and doubtless the difficulty of cultivating many of them really well, have each tended to bring about such a state of things. They deserve not though to be so regarded, for considering them as a whole, and their varied and numerous attractions, they embody a rich mine of interest.

Tetratheca verticillata is easily grown, simply requiring to be favoured with sufficient root-room, good soil, such as sandy fibrous loam, plenty of leaf-mould, and silver sand, or turfy sandy peat with less leaf-mould, not forgetting ample drainage, &c. It will increase by cuttings, with ordinary attention to their striking.



S Holden del & Lith

Amicia zigomeris.

AMÍCIA ZIGOMERIS.

(Two-jointed-podded Amicia.)

Class.
MONADELPHIA.

Order.
DECANDRIA.

Natural Order.
LEGUMINOSÆ.

GENERIC CHARACTER.—*Calyx* campanulate, five-cleft, two upper lobes roundish, large, two lateral ones minute, the lowest one oblong, keeled, and concave. *Corolla* with an orbicular vexillum, and with the wings applied to the keel. *Stamens* ten, monadelphous, with the tube or sheath cleft in front. *Legume* linear, compressed, many-jointed, with the joints truncate at both ends.

SPECIFIC CHARACTER.—*Leaflets* cuneate-obcordate, mucronate; *vexillum* broadly obovate, mucronate; *legumes* having two joints.—*Don's Gard. and Botany.*

SYNONYME.—*Zigomeris flava.*

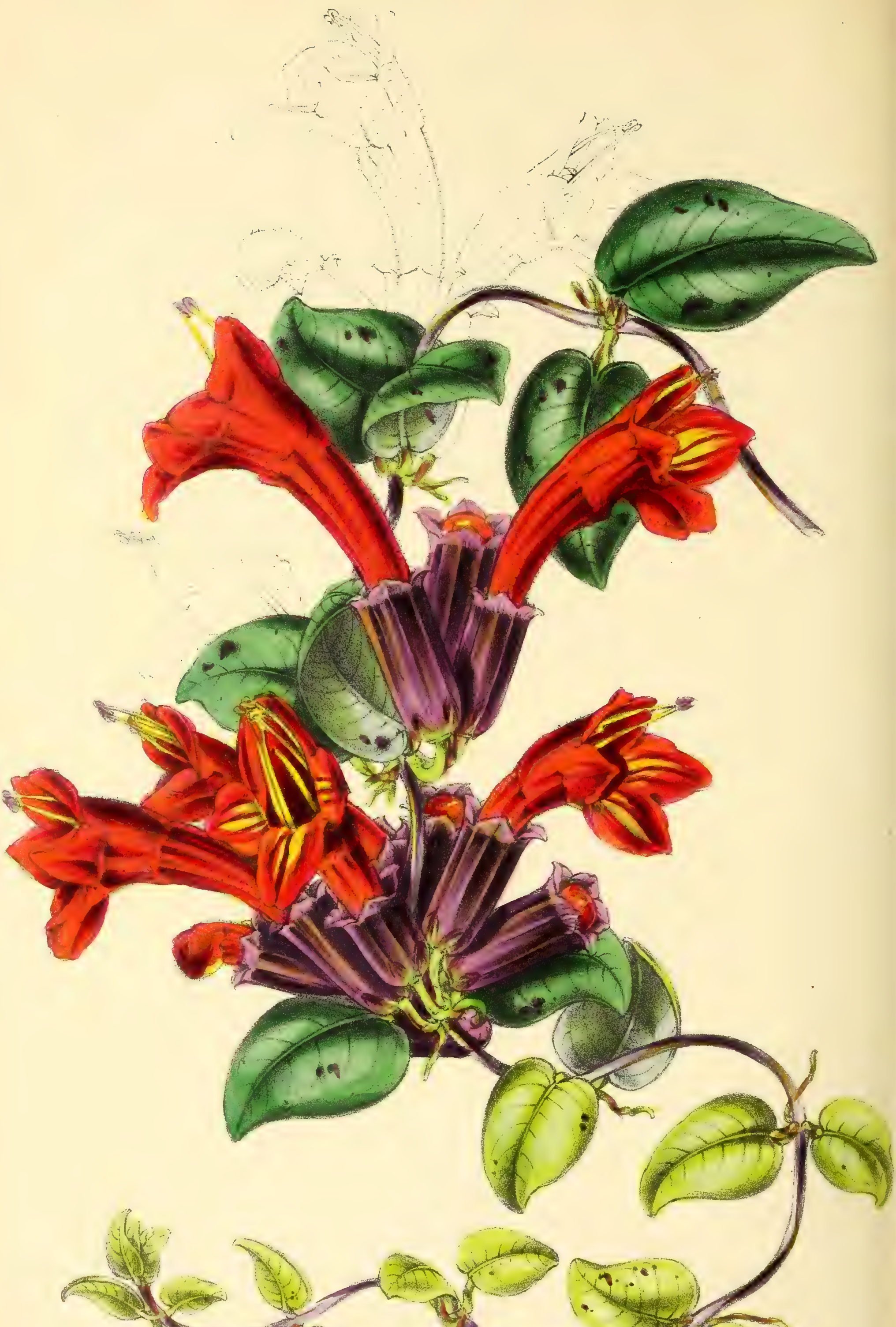
THE genus *Amicia* is very limited in extent, two species only being recorded as comprising it; they are natives of North and South America. *A. zigomeris* is of rather ancient acquaintance, being catalogued as in cultivation twenty years ago; it is stated to be a natural inhabitant of Mexico, and a stove climber, but it is neither a true climber, nor correctly a stove plant. We meet with it in the greenhouse, where it grows very well, and where, in a situation not exposed to much damp and cold currents of air, it would flower, which it does in winter. The "Botanical Magazine," publishing it two or three years ago, states :—"There is a remarkable feature in the entire plant, leaves, calyx, and even the corolla, that they are everywhere filled with pellucid, glandular dots, resembling those of *Hypericum*."

The species is not in particular esteem among culturists, owing possibly to its freedom of growth, and disposition to become rather straggling. It is a tall and erect growing plant, but branches laterally with much freedom, has abundant, handsome foliage, and produces flowers plentifully; they are large, handsome, and have a value peculiar to all flowers that come naturally in the winter season, beyond the circumstance of acceptability on account of their scarceness, that they possess a natural and vigorous appearance those obtained by artificial production do not wear, and which in some measure detracts from their interest.

A. zigomeris succeeds in a loamy soil, is easily struck from cuttings, and may be grown to an interesting object as a pot plant, judicious training being exercised to produce a desirably formed specimen. But it is most in its true character when allowed to grow comparatively as it likes, planted to train on a column or open space of wall in the stove or greenhouse. It would also grow freely in a warm position in summer, in the open air, would produce a fine mass of foliage, and might, if planted out early, flower in autumn. Culturists should ever strive to have in the stove or greenhouse, or in both, some such free-growing plants as the present, so favoured, that they could develope in the finest manner their true character, as then they not only constitute a distinct feature in themselves, but by strongly contrasting with the sort of restraint the majority of their associates unavoidably are subject to, invest the latter, and become themselves invested with an additional charm.

Our figure was taken from flowering specimens in the celebrated collection of Mrs. Lawrence, Ealing Park, last December.

Humboldt and Kunth founded the genus in honour of Baptiste Amici, the celebrated Professor of Modena, who so much distinguished himself by his observations on the movement of the fluids in plants and his improvement of the microscope.



S. Holden del. & Lith

Æschynanthus Boschianus.

ÆSCHYNÁNTHUS BOSCHIÀNUS.

(Vanden Bosch's Æschynanthus).

Class.
DIDYNAMIA.

Order.
ANGIOSPERMIA.

Natural Order.
GESNERACEÆ.

Generic Character.—*Calyx* ventricosely tubular, five-cleft. *Corolla* tubular, incurved, with a dilated campanulate throat, and an oblique, sub-bilabiate limb. *Stamens* four, didynamous, exserted, usually with the rudiment of a fifth; anthers at first conniving by pairs; cells parallel. *Stigma* excavated, somewhat funnel-shaped. *Capsule* long, siliquose, two-valved, falsely four-celled. *Seeds* small, generally scabrous, from papillæ ending in a bristle-like tail at both ends.—*Don's Gard. and Botany.*

Specific Character.—*Plant* epiphytal, evergreen. *Stems* trailing, small, rooting at the joints. *Leaves* ovate, blunt, opposite, entire, fleshy, small; *petiole* short. *Flowers* in axillary clusters, peduncled; *peduncle* short. *Calyx* tubular, smooth, large, purplish-brown; segments equal, blunt. *Corolla* tubular, very wide at the throat, almost funnel-shaped, much swollen at the base, deep scarlet, whitish at the throat, and streaked there with reddish-purple; *limb* divided; segments four, large, spreading; upper one two-lobed. *Stamens* inserted in tube of corolla. *Anthers* joined in two pairs. *Fruit* very long.

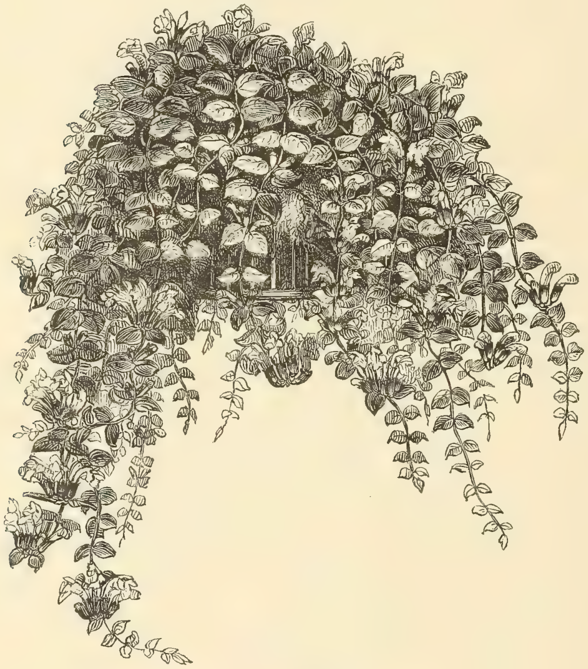
The coloured portion of the opposite plate is a representation of this plant as it first flowered in the country, which it did in the collection of R. G. Lorraine, Esq., last March; that part of the plate in outline, represents its true character since more fully developed. The earliness of the season in which the first blossoms expanded, it is more than probable accounts for their apparent scanty production, as the same plant in the course of the summer bore them in the way they are shown, as before mentioned, in outline.

British collections are indebted for so interesting an addition, to the continent, whence it was introduced about two years ago. It is a native of the island of Java, where it grows as an epiphyte, and is worthy to associate with other beautiful members of the genus, as *Æ. grandiflorus* and *maculatus;* it may not, in some respects, equal these favourite species, especially the former, in the colour of its flowers, but it has features which render it as engaging; not the least deserving of these is the length of time it produces flowers. The subject of our drawing continued to bear them from the period already mentioned, till a recent date.

Some attention to its management is required to cultivate this new species successfully. It will grow freely, rather too much so, as will most of its family, if planted in ordinary soil, and kept in the stove, or even in the greenhouse, but its flowering is not a matter of so great certainty. Our woodcut shows the way in which specimens grew that have flowered in a highly satisfactory manner, in the collections of the gentleman we are indebted to for our drawing, and the Messrs. Henderson of

Pine-apple Place. The plants had little matter to root into, nothing richer than decayed moss, fibrous peat, or leaf-mould, and were wholly under control, so far as being kept dry, &c., at pleasure. In the proper application of the last principle lies the secret of flowering many succulent plants, difficult to bring into an inflorescent condition. Small rockeries, or rustic fixtures in the stove, or *Orchid* house, furnish appropriate situations for our subject to trail over, and grow upon as it pleases ; and under such circumstances there is little fear but it would flower freely. Specimens brought into flower in the stove, afterwards do well, and continue to develope their blossoms in the greenhouse. Cuttings root with great facility.

The generic name is from *aischune* modesty, and *anthos* a flower ; the specific is given by De Vriese, complimenting Vanden Bosch, formerly Governor-General of the Dutch possessions in the East Indies.



GARDEN SCENERY.

As we recently took advantage of a very pleasing notice of an estate which is well known to us, in order to incite planters and layers-out of grounds to adopt a method of systematic arrangement which offers great advantages; so on the present occasion we appeal to another account of a very beautiful garden that merits the attention of every amateur of taste possessing moderate affluence. Both the original descriptions were from the pen of the late Mr. Loudon, and we cannot offer a better testimonial of grateful feeling to his memory than by endeavouring to promote the object of his labours.

At page 124, vol. x. of his "Gardener's Magazine," commences the "*Descriptive Notice* of the garden of Bishopstoke Vicarage." Thirteen years have elapsed since that notice was penned, and vast alterations have subsequently occurred, both in science and practice. But what was pure taste then, cannot have changed its character now; and the following remarks are therefore offered with confidence.

Two very beautiful and illustrative cuts precede and accompany the numbered catalogues of the erections, trees, and plants which are given in several of the introductory pages, and to these we must refer the reader. Our chief object will be an attempted explanation of the rationale of the practical remarks which are appended to the lists.

The estate itself, or *place*, as it was termed, comprised an acre or two, situated on a bank facing the south. The garden or pleasure-ground, of an irregular figure, approaching to an oblong, gracefully rounded on the eastern end, encompassed with trees of choicest character, and enriched with upwards of 250 groups, or single specimens of the finest American shrubs and the select trees, the whole constituting "a perfect gem of botanical beauty in the foreground, heightened in effect by interesting gleams of distant scenery, seen between and over fine oaks and elms, on the lower part of the declivity."

Such a spot may be compassed by the means of any tasteful person of very moderate income. A great place—of which Britain above all the world contains thousands of examples—belongs only to the affluent; and while it commands admiration, is subject to many alloys that neutralise its pleasure-bestowing qualities. But an acre or two, having a neat and commodious dwelling-house upon it, can be decorated and "kept" to a point of surpassing, simple elegance, at little risk or cost.

The first imposing object noticed by Mr. Loudon on his entering the grounds was a *Magnolia grandiflora*, 27 feet high, and about 25 feet wide, thus occupying a space of 275 square feet; and yet this magnificent tree had been moved in the month of August, twelve years before, without sustaining any injury; "the reason being, that every root and fibre was preserved, and the latter not exposed to the air more than five minutes."

This species of *Magnolia* flourishes in rich sandy loam, drained (if needful) at bottom. We never saw but one tree that, situations considered, could compare with this tree: it grew against the side of Mr. Brown's house, at his nursery near Slough, and was fated to perish by fire. If memory do not deceive, there was, in 1836, a noble specimen in Claremont Gardens, placed against a high wall, but remote from the dwelling. Magnolias are checked by moving, though *grandiflora* will sustain much rude treatment; but on the question of transplantation during the height of summer, it is only needful to state, that having a bank of earth thrown up near a boundary fence, and wishing to form an evergreen hedge, we removed a number of laurels, at least three to four feet high, dug holes in the bank, about four feet apart, and planted the laurels therein, one by one as taken up, trickling the earth among the roots, and puddling-in with water. The hedge was thus formed in the middle of July, at a period of heat and drought not much inferior to that we now witness (July 30, 1846). Not a plant failed; or at all events, the hedge progressed by occasional waterings, without blanks, and would have been 20 feet high long since had it not been kept down. This simple fact confirms the practicability of the safe removal of evergreens.

A very extensive 10-feet wall had been built by the proprietor of the vicarage, and this was covered with elegant shrubs, among which are named some New Holland species of Acàcia, Metrosideros, Eucalyptus and Melalèuca. The peculiarity of this wall was, that to a coping which projected nine inches, was appended a copper trough to collect and carry off the rain; to the great benefit of the shrubs and herbaceous plants below. The mischief occasioned by drip is very considerable, and moreover, as the tenderer shrubs were covered by mats in winter, the projection of the coping assisted the operation, and left some free space to the plants. *American shrubs*, as they are styled, were freely admitted, and placed in groups on the lawn; among these were numbers of the Pontic Azalea, and other species from eastern Europe; also eleven varieties of the Japan *Camellia*. We cannot sanction the general introduction of the last-named genus, because its natural season of blooming falls at a period when its flowers must be exposed to the worst weather of the early spring. Allusion is particularly made to these groups, with the view to introduce Mr. Loudon's observations on the mode of treatment they were subjected to. He said—"The American shrubs grow so vigorously in the groups on the lawn, that they are taken up and replanted every two years, generally in the month of September. The Azaleas and Rhododendrons are taken up with large balls of earth, and the ground is so well watered at the time of replanting that the plants never lose any of their leaves. They are placed at such distances as nearly to touch one another; so that if they were not taken up and placed further apart every two years, they would soon form a matted thicket, and display blooms only on their upper surface; whereas by keeping each plant distinct, it displays its blossoms all round from the ground to the summit. The *soil* in which these American plants are grown is composed of two-thirds of sandy peat (heath mould), and one third of rich loam. The loam is absolutely necessary to promote vigorous growth of Azaleas, Rhododendrons, and almost all kinds of American shrubs."

It is not probable that any error exists in this statement by so accurate an observer as was Mr. Loudon, and we can vouch from partial experience, that the *Indian* Azalea may be moved, planted out, and repotted ; also that the late Mr. Brown, of Slough, assured the writer, that he was in the habit of turning out many of his Azaleas annually into peat or bog beds, to stand there during summer. Further than this, one of the Surrey growers, at Sunning Vale, lifted many of the American plants with entire balls, re-set them immediately, and thus was able to retain the roots in a compact state and ever fit for removal. Still, however, unless a soil be very congenial, and the operator knowing and adroit in his work, the attempt might be perilous. The roots should not be disturbed, and they may by judicious treatment be always kept compact; but whether moved or not, fresh, and frequently renewed soil are essentials. Over the great Azalea bed at Claremont, a stratum of suitable earth was laid yearly, and thus an upper tier of roots was enabled to advance into an appropriate medium. Pure sandy bog appears to be too poor; a better soil would be light loam, leaf mould, and heath soil.

Grouping, in respect to trees and shrubs, and parterre planting in masses, have come much into vogue since the year 1834, when Mr. Loudon wrote the article which furnishes our present model. In it he impresses as a principle, that all flowers and shrubs should be planted in masses of one kind, for thereby brilliant groups of the same colour are produced. This is unquestionably of moment; but there is another motive to be taken into the account; for although it be true that plants of miscellaneous character will live and display bloom in soils which are not strictly applicable to all, yet it is equally so that a number of plants of the same kind must flourish better in a soil which is precisely adapted to their individual habits; and as, moreover, the greater number of parterre groups are re-planted every year, it follows that entirely new soils, suitable to each, may conveniently be supplied to the beds; and thus, by taking away to the compost-grounds, or to the shrubberies, the mould of last year, and conveying to the beds new loam, bog-earth, half-decayed leaves, or combinations of some or other of such like materials, Roses, Geraniums, Heaths, Azaleas, Lobelias, Verbenas, with other greenhouse, half-hardy, and hardy plants, may be made to flourish with a richness of verdure and bloom of which most ordinary cultivators can form but a very inadequate conception.

There is one plant, of extreme beauty, which (if it thrive at all) appears to require no renewal of soil; it is the *Fuchsia*, in all the varieties of it that are sufficiently hardy to withstand the utmost rigour of our winter: such are the original *F. coccinea*, *gracilis*, *virgata*, *globosa*, &c. We have plants by us growing in the same spot, and improving, where they were originally set out ten years since; the soil is the staple loam of the garden, to which leaves and other vegetable matter had been occasionally added. The shoots of these shrubs usually die down, after blooming, till November, and are cut back either before, or after winter. But the last season being so mild, and they retaining life and moisture, it was determined to try the issue; and now they are clothed with the healthiest foliage and blossom. This is the first time that the interesting fact has been witnessed here; and as the result is very gratifying, we allude to it, in order to obviate that premature, and needless winter cutting back, that possesses no other advantage than the early removal of some dry-looking rods, which, it is now certain, may occasionally revive to new and increased vigour.

As evergreens, in groups, it will be safe to recommend *Garrya elliptica*, and *Berberis Aquifolium;* they are extremely ornamental at all times: all the evergreen Berberry-shrubs are also desirable, and will grow well in loam.

Mr. Loudon's closing remarks are so judicious, that every cultivator of experience and observation must coincide with them. Referring to the importance of a dry soil, or what is pretty nearly the same thing, or better—one rendered dry by deep, efficient draining—he says, "The great mischief to all tender plants is produced by the late hoar-frosts in March and April, which are generally followed by very hot, sunny days; but when exotics are planted in a genial soil, placed on a very dry subsoil, and in a warm, sheltered situation, they ripen their wood so well in autumn that they are much better conditioned to resist hoar-frost, and that scorching of the leaves which is produced by succeeding sunshine, than such as are planted in rich soils."

We have been taught by experience, that winters so severe as those of 1838, 1841, and 1844-45, can, and do, kill the Arbutus, Bay, and Laurestine; hence would prefer not to hazard any really tender shrubs in the open garden. We possess beauties enough in the American tribes, the Ghent, and other hardy Azaleas, the Rhododendrons, Vacciniums, Berberis, Cotoneaster, Aucuba, and many other of our old evergreen favourites; and among the deciduous tribes, the several ornamental Ribes, Calycanthus, Staphilèa, Gleditschia, Robinia, Chimonanthus, Glycine, Fuchsia, &c., &c.—without risking the safety of more delicate exotics which properly belong to the Conservatory.

Some persons dispute the taste of filling a lawn with parterres; and, to speak truth, we have witnessed so manifest an improvement in a noble property by the removal of all masses of flowers from the grand lawn, leaving *that*, in its amplitude, relieved only by a few magnificent trees, that we are inclined to restrict parterre-planting to small home-lawns, or to detached portions, isolated from those of great extent by tasteful hedges, to which access is given through verdant openings of evergreen shrubs, or by arches overgrown with ivy. With such arrangements, a small extent of ground can be made to offer every variety of horticultural beauty that the eye of pure taste could require.

PRESERVATION OF FLOWER-GARDEN PLANTS IN WINTER.

We purpose a few remarks upon this subject, principally as supplementary to those in our last, on the propagation of the plants in question, and also because whatever degree of knowledge our readers may possess in reference to it, we are sure, and they will admit us correct, that it cannot be too well understood.

Proper "preservation of flower-garden plants in winter" is simply the maintaining of them alive, and in good health, through that period. In the majority of winters, under the prevalent systems of managing, it is accomplished with various degrees of success, often at cost of much anxiety, considerable expense, and no little labour and trouble; and it invariably follows, and as a natural consequence does so, for it is rendered necessary by ill management, and from proceeding on wrong principles, that after the greatest exercise of care and solicitude, it is found there is least room when the proper season arrives for congratulation on the success with which such labours are rewarded. In this view of the question we do not take into account the ill consequences of a long and protracted winter, nor the injury an unusually severe one may be the occasion of, as they are occurrences of an extraordinary nature, and as such require extraordinary and especial measures.

Frost alone is usually considered the great and too frequently the only enemy to be contended with, the only obstacle which can intervene to prevent the accomplishment of the object in view; therefore, when choosing measures that may lead to its attainment, such an idea is too apt to influence their selection. It is not committing an error to regard frost as a great antagonist, and one which to encounter and successfully contend against requires considerable skill; but it is a sad mistake to view it as the only enemy, for there is one which has much more frequently to be combated—one in a great degree more destructive, though by a much slower process, and one much more subtle, in *moisture* in its different forms. This is true in a very extended sense; so much so that we doubt not every one who has had any experience in preserving the plants under notice would acknowledge it is correct to assert that where one is destroyed by frost, three invariably are lost by being subject to too great a degree of wetness. Hence it follows that what is directly opposite in nature to this destructive agent, would be most efficacious in furthering what is desired to be attained, which is the case; consequently, we are anxious to direct attention to preserving plants in a state of comparative dryness—a condition which has for one of its recommendations the fact that it is the great and invincible antagonist of frost.

But the first and main steps to take as tending to insure the preservation of flower-garden, as well as all plants, in a successful manner, is to have them good in themselves, well-rooted, and then well hardened; so much being accomplished, proceedings may be taken to bring them into a sufficiently dry condition, a state which would not be injurious, but in every respect beneficial to the plants, as we shall presently show. It should first be ascertained whether the erection in which they are to be preserved is properly dry, or at least can be rendered quite so at pleasure; if it has the advantage of being furnished with a heating apparatus, no difficulty can arise from this source, and if not, it is easy to render it perfect in this respect, with the aid of the autumn suns, previous to the period for stowing the plants away; once in a correct condition, it is a matter of choice how long it is maintained so. In watering the plants care should be taken that they never have more applied to them each time it is given than is actually required; and it should be so seldom administered that it ought to be the rule to withhold it from them, and the exception to administer it. Such a manner of treating plants would not be the practice of fanciful notions respecting them, unsuited to their welfare, but the carrying out a principle which is not sufficiently regarded, and indeed can only be understood by those who have had some experience as to the extent plants will live and continue healthy in a cool dry atmosphere. It must be borne in mind, its coolness in conjunction with comparative drought is an essential point that should not be lost sight of; were it a dry atmosphere and dry state of things alone that were required, no difficulty would be experienced in furnishing them by the agency of fire; but drying influences without some degree of moisture would be equally destructive from opposite causes to those which, it is the burden of our complaint, are generally the source of extensive mischief.

The first care should be to maintain the plants in good health, and next, to guard them from all hurtful influences; little skill is required to effect the first attainment: the plants need only be left alone, and Nature will accomplish the remainder, by descending into comparatively a completely inactive state. That the effect of general practices is almost wholly opposed to such principles can easily be shown. Take, for example, the treatment the class of plants in question are subjected to at the period of which we write; usually they are favoured with greenhouse room: they are small plants in small pots, and therefore by some means must be elevated as near the glass as possible, that they may not suffer from darkness and damp. If they are the more succulent kinds, their usefulness is destroyed, and they themselves exhausted in unnecessary growth, developed by the too great warmth they experience in their situation. Hard-wooded plants fare differently, but not better; the conditions they experience are not favourable to their making growth, but the incitement to do so those conditions occasion, dries up the principle of life. Under such circumstances they require a considerable quantity of water, which is given, apart from the inconvenience of applying it, at great risk of ill effects ensuing from so much moisture being employed in the winter season, not perhaps to the plants to which it is administered—and to maintain which alive it is necessary—but to those it may come in contact with after escaping from the first, or from it at all finding a lodgement, thence furnishing a source whence a continual stream of damp rises, which the application of artificial warmth or keeping the house closed as occasion may require, only contributes towards evolving. Plants preserved under such treatment as the foregoing, would be more favourably situated when kept in large cutting-pots or pans, for then they are much less liable to be subjected to the alternations of excessive drought and wet, and the little water necessary for them, can be given more conveniently at much less risk of it occasioning the plants injury, or of itself being the origination of evil.

In cold frames it is seldom thought of keeping any plants but such as are known to be hardy; and even those, from the indiscriminate manner they are watered when they seem to require it, and also from being often exposed, to an unlimited degree, to the injurious influence of wet, are not found in spring the robust plants in rude health they ought to be.

It is not more requisite that plants under shelter should be otherwise than dormant, to insure their preservation, when that is the only object in view, than those in the open air; the latter are kept so, notwithstanding to however great extent wet may prevail, by the cold to which they are subject, but tender plants cut off from such checks to their vegetative powers being called into action, and being, though for the most part unintentionally, furnished with those conditions favourable to their developing growth, it is impossible they can continue dormant; hence is moisture, in conjunction with the means taken to protect plants from frost, the chief agent in inducing them to grow, and in that way expending their usefulness, at the same time rendering them peculiarly open to injury from frost, and by its presence facilitating freezing attacks taking effect.

A very convincing and instructive proof of how little actual fluid is necessary for the support of vegetable life in winter, is sometimes accidentally afforded by a branch of some evergreen, often a very small portion, observable in a living, perfectly fresh condition, upon the surface of the ground, throughout the whole autumn and winter; the same kind of evidence may be seen in the circumstance of shoots of Willows and other easily-rooting things striking after similar and equal exposure. Herbaceous plants, too, which furnish a hard argument in favour of our ideas, may frequently be met with; those in light soil, and perhaps accidentally sheltered from rain by an adjoining friendly bush, by their strength and formidable readiness to rush into growth in spring, strongly contrast with such as are unfortunate enough to be located on a border of heavy soil, and consequently one wonderfully retentive of moisture, and exposed to all that falls, their whole organization continually enfeebling, and perishing by degrees, and the blanched vegetation they endeavour to put forth when the season for activity again returns. Instances might be greatly multiplied which would illustrate the point in question: take further the hardy health and general sturdiness of plants on high and rocky ground, and even wholly on rocks, and it will be found they are seemingly active, and even growing, in proportion as they are free from moisture; the vivid hue of evergreens growing in a dry situation, compared with the yellow appearance and sickly aspect of such as are injured by the superabundance of moisture they happen to be in contact with, &c.

The conclusion arrivable at is, then, that a superabundance of moisture in any shape in connection with plants in winter is highly injurious, and especially in the case of flower-garden plants, from their being mostly soft-wooded, and most unpropitious to their proper and successful preservation: this being admitted, our next business is to point out the means of being rid of the evil, which we can best do by directing attention to the most suitable construction for the preservation of the plants we are considering, at the period under review.

What is known as a cold pit, it is taken for granted is understood is the best erection for our purpose: suppose one was going to be constructed, a situation naturally dry should first be chosen; but that suretyship might be doubly sure in reference to this, a main point, efficient drainage should be provided. Its size would, of course, depend upon circumstances, so also would its form; if span-roofed, its aspects should be East and West; if a lean-to roof, it should have a North aspect; and a heating apparatus of some description should be provided, to resort to in extreme cases. To an erection constructed upon these principles, having regard to those we have been dwelling upon, we would confidently consign all the most tender plants that are employed in the flower-garden, certain they would there be quite safely and better preserved than they could be elsewhere. There is no peculiarity about the cold pit above spoken of that would render it less useful in summer than any similar erection, but rather the contrary; for instance, the drains intended to keep it dry in winter might be so arranged and formed that they would act as channels to produce a circulation of air in summer, &c.

The advantage of adopting the plan of keeping plants that we wish to direct attention to, does not stop where the foregoing paragraph left it; for look at the privilege of having a greenhouse uncommoded by, and indeed, completely free of plants with which, in winter, we find them too generally clogged. On the score of economy, also, the method has numerous recommendations; as witness many minor gardening establishments, where the vinery and peach-house are made the receptacles of large quantities of plants of this class, too often to the injury of the legal occupants, by the prevalence of influences that excite to grow, and which have for the foundation of their origin moisture, which in this case is first injurious in engendering undue cold and damp, then follow measures to dispel the latter, till the ill result alluded to is accomplished; whereas, were a proper state of things only tolerated, the presence of the plants would not be injurious.

The principle which is chiefly the subject of this paper, in an horticultural point of view is capable of being made extensively serviceable; it would be irrelevant to pursue it much further on this occasion: another may afford an opportunity of doing so.

Preserving flower-garden plants in winter is very important, because there are hundreds of gardens which would not be less well adorned with the more choice plants that flourish in our climate in summer, were they employed, than when devoted to more common things. The difficulty of winter-keeping overcome, no other obstacle would exist to interfere with such plants being extensively used.

REVIEW.

The Vegetable Kingdom. By J. Lindley, Ph.D. F.R.S., & L.S., &c.

This work has arisen out of the author's former "Natural System of Botany," of which it is a highly improved amplification, intended to bring the present advanced state of botanical science clearly before the British public, and to make them acquainted especially with the substance of what has been done and written on the subject over the whole Continent of Europe.

The necessity for such a publication as this, in its enlarged and matured form, will be immediately apparent to all who are conversant with the existing state of things in the scientific world during the past few years. The light of induction from observed facts has never been brought to play more strongly or more beneficially on theories and systems than during the period just mentioned ; and, as a necessary result, Science has never before lifted her head with a more truthful, and therefore commanding aspect.

But while new revelations, drawn from Nature herself, thus tend to place scientific conclusions on a more respectable and solid basis, the wonderful and almost confusing variety of phenomena which is perpetually being gathered, unavoidably gives rise to the proposition of a nearly equal diversity of hypotheses, which, though they perplex the inquirer for a time, serve, as all hypotheses do, to elicit truth, by showing the extent to which she may or may not be tracked in a particular direction.

This being, therefore, an epoch in the history of science marked by a close investigation of natural phenomena, and the usually resultant amount of change in theories and systems ; and botanical science being one of the fields in which this peculiarity of the times has most developed itself ; it becomes important that, at the end of certain periods, varying in length according to the amount of progress made, some person should give to the world the combined result of all the exertions which have been put forth, and the enlightenment which has followed.

It is this, then, in a thoroughly digested manner, which Dr. Lindley has accomplished in the work before us. What he has himself discovered, in the very central sphere of observation which he occupies, and what he has gleaned from the facts and remarks recorded by other naturalists, is here concentrated for the improvement of a system of arranging the vegetable tribes ; an object, we may add, which lies at the very foundation of all attainment in botanical science, as it is next to impossible to make any satisfactory progress towards mastering such a pursuit, unless it be by regular and systematic means.

One of the most noticeable effects of the labour bestowed on this volume, is the simplification of what is called the Natural System of Botany. Indeed, as the most perfect acquaintance with any kind of truth will always exhibit it to us in an aspect of grand simplicity, the nearer any one approaches to perfection in even systematic arrangement, which is but the skeleton of truth, the more simple will be the form they adopt. And the fulfilment of this end in such an extensive group as the vegetable family, is, in itself, we need scarcely inform the student, of the very greatest service.

Besides, however, the simplification which has been effected in the general outline of the system, the same thing has been attempted with some of its minor details. In the nomenclature, for instance, a thing which is universally considered open to amelioration, the author has introduced what we consider an improvement, by Anglicising the names of many of the orders and tribes ; so that the student may now at any time refer to them conversationally in his own language, by a simple term or two with which most people are familiar, without the seeming affectation of quoting words which only the botanist uses and understands. There is really no strong necessity for Science to have a language of her own ; and it is when her dialects can be made to harmonise most with our household utterances and thoughts, that she herself will become most familiar, interesting, and useful.

We must pass, however, from this hurried and general sketch, to a short extract or two from the author's own preface. As an advocate of the Natural System of Botany, he says :—

"It has been pretended that the characters of the Natural classes of plants are not be ascertained without much laborious research ; and that not a step can be taken until this preliminary difficulty is overcome. But it is hardly necessary to say, that in natural history many facts which have been originally discovered by minute and laborious research, are subsequently ascertained to be connected with other facts of a more obvious nature; and of this Botany offers perhaps the most striking proof that can be adduced. One of the first questions to be determined by a student of Botany, who wishes to inform himself of the name, affinities, and uses of a plant, seems to be, whether it contains spiral vessels or not, because some of the great divisions of the vegetable kingdom are characterised by the presence or absence of those minute organs. It is true that careful observation, and multiplied microscopical analyses, have taught Botanists that certain plants have spiral vessels, and others have none; but it is not true, that in practice so minute and difficult an inquiry needs to be instituted, because it has also been ascertained that plants which bear flowers have spiral vessels, and that such as have no flowers are usually destitute of spiral vessels, properly so called; so that the inquiry of the student, instead of being directed in the first instance to an obscure but highly curious microscopical fact, is at once arrested by the two most obvious peculiarities of the vegetable kingdom.

"Then, again, among flowering plants two great divisions have been formed, the names of which, Monocotyledons and Dicotyledons, are derived from the former having usually but one lobe to the seed, and the latter two,—a structure much more difficult to ascertain than the presence or absence of spiral vessels. But no Botanist would proceed to dissect the seeds of a plant for the purpose of determining to which of those divisions it belongs, except in some very special case. He knows from experience that the minute organisation of the seed corresponds with a peculiar structure of the stem, leaves, and flowers, the most highly developed, and most easily examined parts of vegetation; a Botanist, therefore, prefers to examine the stem, the flower, or the leaf of a plant, in order to determine whether it is a Monocotyledon or a Dicotyledon, and rarely finds it necessary to anatomise the seed.

"The presence or absence of albumen, the structure of the embryo, the position of the seeds or ovules, the nature of the fruit, the modifications of the flower, are not to be brought forward as other difficult points peculiar to the study of the Natural System, because, whatever system is followed, the student must make himself acquainted with such facts, for the purpose of determining genera. The common Toad-flax cannot be discovered by its characters in any book of Botany, without the greater part of this kind of inquiry being gone through.

"In the determination of genera, however, facility is entirely on the side of the Natural System. Jussieu has well remarked 'that whatever trouble is experienced in remembering, or applying the characters of Natural Orders, is more than compensated for by the facility of determining genera, the characters of which are simple in proportion as those of Orders are complicated. The reverse takes place in arbitrary arrangements, where the distinctions of classes and sections are extremely simple and easy to remember, while those of genera are in proportion numerous and complicated.'"

His own announcement of the intention of the work is as follows:—

"Its object is to give a concise view of the state of Systematical Botany at the present day, to show the relation or supposed relation of one group of plants to another, to explain their geographical distribution, and to point out the various uses to which the species are applied in different countries. The names of all known genera, with their synonymes, are given under each Natural Order, the numbers of the genera and species are in every case computed from what seems to be the best authority, and complete Indices of the multitudes of names embodied in the work are added, so as to enable a Botanist to know immediately under what Natural Order a given genus is stationed, or what the uses are to which any species has been applied. Finally, the work is copiously illustrated by wood and glyphographic cuts, and for the convenience of Students, an artificial analysis of the system is placed at the end."

To his own elaborated plan of arrangement, the author has prefixed an analysis of the systems of Ray, Jussieu, De Candolle, and all who have ever organised anything approaching to a Natural System. By a comparison of these, in the chronological order of their promulgation, the student will be enabled to see what improvements have been effected, and by thus elevating his appreciation of that now proposed, he will set about its examination with additional zest and pleasure.

If we need say more than we have already done by way of recommendation, we will add that the entire work is got up with that laborious attention to accuracy for which the author is so conspicuous. It is beautifully printed, and the illustrations are chiefly of a useful character, such as will materially aid the inquirer in fixing on the minuter and more prominent distinctions between tribes, orders, and genera. Still, there are occasional portraits of entire plants, taken from our own Magazine, by which the prevailing habit in any particular tribe of plants is appropriately indicated.

FLORICULTURAL NOTICES.

NEW OR BEAUTIFUL PLANTS FIGURED IN THE LEADING BOTANICAL PERIODICALS FOR AUGUST.

Angulo'a Ru'ckeri. "This charming plant makes the third species now in our gardens of a genus which, in the spring of 1844, was a botanical puzzle. Such is the progress of scientific discovery when promoted by horticultural enterprise." It "is immediately recognised by its flowers having deep crimson spots on a yellow ground, and a deep crimson lip. The form of the latter, again, approaches that of *A. Clowesii*, but it is less hairy, and the lateral lobes are blunt, as well as shorter. Moreover, the flower is not resupinate in the common acceptation of the term. The species was amongst the most striking of all the *Orchids* exhibited in the garden of the Horticultural Society in May last, at which time the accompanying drawing was made." Each of the species above alluded to are discoveries of Mr. Linden's, but of the native habitats of two of them nothing is known; *A. Ruckeri* is one of the latter, and is the species noticed at page 141.—*Bot. Reg.* 41.

Asysta'sia coromandelia'na. "A frequent plant in India, according to Dr. Wallich, and the wonder is that it has not before now been introduced into our collections. The Kew Gardens owe the possession of it to Messrs. Henderson, of Pine-apple Place, Edgware Road. It flourishes in stove-heat, and flowers throughout the autumn. The genus *Asystasia* (of the meaning of the word, as applicable to the plants that bear it, I am ignorant) was founded by Blume on a Java species, and Nees has abstracted ten others from the old *Ruellia*, and among them the handsome *A. Neesiana*, figured in the Pl. Asiat. Rar. t. 83; and to which genus, I presume, may be also referred the *Ruellia lilacina*, Bot. Mag., t. 4147. The present one is perhaps the handsomest of the genus, from the large racemes of deep lilac flowers; Nees calls them blue, but he judges, perhaps, from the colour in dried specimens." The plant is "somewhat shrubby, branched," and has "opposite, ovato-cordate, soft leaves," and bears its racemes of flowers at their axils. Synonymes—*Ruellia coromandeliana, R. secunda, R. intrusa, R. obliqua, Justicia Gangelica.—Bot. Mag.* 4248

Allople'ctus re'pens. "A pretty Gesneriaceous plant, probably scandent upon the trunks of trees, and rooting among the dead bark and moss. It is a stove plant, native of the damp woods in the ascent of the Sierra Nivada St. Martha, and was thence sent to the Royal Gardens of Kew by our collector, Mr. Purdie. A comparison of this with the figure of *Alloplectus dichrons*, at Tab. 4216, will show that the essential characters of the two are the same as to genus. It flowers in February," is "a small, shrubby plant, with trailing stems and branches," and "rather small, ovate, fleshy" leaves, and axillary flowers with a large, loose, spreading calyx, pale-green, blotched with purple, and a corolla, yellow tinged with red, having four spreading segments.—*Bot. Mag.*, 4250.

Calyste'gia pube'scens. "This curious plant approaches very nearly to the *C. sepium*, or larger Bindweed of our English hedges, from which it differs in having firmer and smaller leaves, much narrower bracts, and a fine pubescence spread over every part. It is the first plant of its order that has been mentioned as producing double flowers. They are about as large as that of a double *Anemone*, but the petals are arranged with the irregularity of the *Rose;* they are of a pale, very delicate pink, and remain expanded for some days. The calyx is quite unchanged. The exterior petals are very much lacerated and irregular in form; those next the centre are narrow, drawn together in a kind of cone; the next central are completely concealed by those without them, and diminish till they are mere scales, analogous to those which may be found in the first buds which burst in the spring. Not a trace can be found of stamens or pistil."—*Bot. Reg.* 42.

Colla'nia Andinama'rcana. "The original specimen of this beautiful plant was described by the Hon. and Very Rev. Mr. Herbert, from a native sample in my Herbarium, gathered by Mr. Mathews, on the lofty mountains of Andinamarca in Peru. Mr. William Lobb collected seeds of this plant in Peru, and probably in the same or in a neighbouring locality, and these have succeeded so well as to produce the noble flowering specimen here represented, in April of the present year (1846). Respecting this genus, it will be seen that I adopt Mr. Herbert's character, although the habit (climbing, not erect) is at variance with one of that gentleman's generic distinctions, and the fruit is imperfectly known. The present only differs from our native specimens in its more luxuriant growth, and, as a species, is remarkable for its leafy racemes. It was reared in a hot-bed, and then removed to a cool greenhouse. The open border would, in all probability, suit this species best in the summer." It is a tall, straggling plant, with herbaceous stems, which are clothed with alternate, rather long, lanceolate, glaucous leaves. "The decurved apex of the stem bears a drooping umbel of racemes of flowers." The flowers are pendent, tube-shaped; their sepals "orange-red, tipped with black;" petals "pale yellow, tipped with green."—*Bot. Mag.* 4247.

CYCNO'CHES EGERTONIA'NUM *var.* VI'RIDE. "This plant was imported from Oaxaca, by Messrs. Loddiges, and flowered with them in August, 1843, when the accompanying figure was made. It is evidently a variety of the *C. Egertonianum*, distinguished by its flowers being of a pale watery green, and not deep purple. But what is *C. Egertonianum* itself? In our volume for 1843, at p. 77 of the miscellaneous matter, we have extracted from Mr. Bateman's magnificent work his account of how the long-spiked, small, purple-flowered *C. Egertonianum* is only the short-spiked, large, green-flowered *C. ventricosum;* how the same plant at one time bears one sort of flowers, and at another time another sort; and we have shown how the same plant, nay the same spike, is both the one and the other, and neither. *C. Egertonianum* is then a sport, as gardeners say, of *C. ventricosum.*" Synonyme, *C. stelliferum.*—*Bot. Reg.* 46.

CLE'MATIS HEXASE'PALA. "A New Zealand plant, seeds of which were presented by J. R. Gowen, Esq., in 1844, to the Horticultural Society, in whose Journal the following account is given of it:—'This is a little twining plant, with shining, nearly smooth, ternate or biternate leaves, whose petioles twine round any small body with which they may come in contact. The leaflets are cordate-ovate, coarsely serrated, and often three-lobed. The flowers are small, pale-green, very sweet scented, and appear in threes or fours from the axils of the leaves. Their stalks are long and hairy, and each has a pair of small bracts below the middle. The sepals are very uniformly six in number, of a narrowly oblong form, and spreading so as to form a small green star. Contrary to the usual structure of the genus, the stamens are constantly six only in number, and about half as long as the sepals.'" It is a hardy greenhouse plant, flowering in April. Synonyme, *C. hexapetala.*—*Bot. Reg.* 44.

FRIE'SIA PEDUNCULA'RIS. "An elegant shrub, three to six feet high, with something of *Myrtle*-like habit, as seen in our gardens, and with copious, delicate, drooping," white "flowers on pendent stalks. It is a native of Van Diemen's Land, and requires a cool frame or greenhouse for its successful cultivation. It is not improbable that near the coasts of the middle and south of England this pretty plant may be found to brave the winters in the open air. Only one species is known—the *Friesia racemosa* of Mr. Cunningham (from New Zealand), being as long ago correctly indicated by Vahl, a true *Elæocarpus.* The genus was named by De Candolle, in compliment to Elias Fries, Professor of Botany in the University of Lund, and author of various Cryptogamic works and other publications relating to the Flora of Sweden. Synonyme, *Elæocarpus peduncularis.*—*Bot. Mag.*, 4246.

GARDE'NIA FLO'RIDA *var.* FORTUNIA'NA. "The magnificent variety now figured from the Garden of the Horticultural Society," Dr. Lindley writes, "was sent from the north of China, by Mr. Fortune. In the Journal of the Society is the following account of it:—'The common single and double varieties of this plant are known to every one. That which is now noticed, differs merely in the extraordinary size of the flowers, which are nearly four inches in diameter, and in having fine broad leaves sometimes as much as six inches long. The flowers are pure white, changing to light buff as they go off, and not unlike a very large double Camellia. Their calyx has the long broad lobes of the original species, instead of the narrow lobes, at least twice as short as the tube of the corolla of *G. radicans*, by which that species is technically known.'"—*Bot. Reg.* 43.

RU'ELLIA LI'LACINA. "We have," states Dr. Lindley, "to correct a great error into which we fell, when, in an early number of the present volume, we referred this plant, Sir William Hooker's *Ruellia lilacina*, to the so-called *R. longiflora* of the gardens. It now turns out that we had not seen this, the real *R. lilacina*, at the time when we fell into the mistake, and we allowed ourselves to be misled by a certain similarity of appearance in the drawings of the two plants, a great resemblance in their leaves, and by their having been both obtained from Mr. Glendinning's

Nursery." (The plant under the erroneous name of *R. lilacina,* noticed at page 70, is Sir William Hooker's *Eranthemum montanum,* Syn. *R. longiflora* ; for the true *R. lilacina,* see page 243, of our last volume.)—*Bot. Reg.* 45.

TORE'NIA ASIA'TICA. "It is not by any means easy," Sir William Hooker remarks, "for a painter to do justice to the rich purple-blue tinge of the flowers of this plant, which with the size of the blossoms, the three dark purple blotches on the pale ground, together with the delicate yellow green of the rather copious foliage, renders this one of the most lovely plants that has lately been introduced to our stove collections. It is an annual, and we are indebted for the seeds to W. Strachan, Esq., Twickenham, who received them from Curtallam. The plants blossomed through the summer of 1846, and as the cuttings strike freely, we find ourselves readily able to propagate the species should the parent plants fail to bear seeds. Even amidst the splendid display of vegetable productions exhibited at the June show of the Chiswick Gardens, this attracted no small degree of public attention. It seems to have a very extensive range in the East Indies, growing throughout Bengal, in Amboyna, Ceylon, Mergui, Chittagong, Sylhet, in the Madras Peninsula, and Dr. Wight adds, it is widely diffused in Alpine regions." Synonymes, *T. vagans* and *hians.*—*Bot. Mag.* 4249.

TROPÆ'OLUM CRENATIFLO'RUM. "Another new Peruvian *Indian Cress,* introduced by Mr. Veitch, through his collector, Mr. W. Lobb, from Pillao and Chagula, Peru ; and may be treated like the other well-known species of the same genus, that is as hardy during the summer months. Its nearest affinity is, perhaps, with *T. Lobbianum,* (Bot. Mag., t. 4097), but the foliage, the colour of the flowers, the edge of the petals, and the relative length of those petals, as compared with the spur, at once distinguish it." Except that the segments of the calyx and spur are tipped with green, and the two upper petals have a few purple streaks, the flowers are wholly yellow, rather large, and are borne in great abundance.—*Bot. Mag.* 4245.

NEW OR INTERESTING PLANTS RECENTLY FLOWERED IN THE PRINCIPAL METROPOLITAN NURSERIES AND GARDENS.

ABU'TILON VENO'SUM. A species fit only for planting in a roomy conservatory, or in some situation where it can be allowed plenty of space. It has more deeply lobed and larger leaves, and is stronger growing than *A. striatum.* Its flowers also are larger, and rather more highly coloured than those of that species. The Messrs. Henderson have recently flowered it, as also in the course of the season have the Messrs. Rollisson and Mr. Low.

ACHIME'NES ATROSA'NGUINEA. The number of specified *Achimenes* is now becoming rather numerous ; we here have one introduced from the Continent ; it is allied to *A. pedunculata,* has similar foliage, but is stronger growing, and does not flower so freely. The flowers are borne solitarily on peduncles from the axils of the leaves, have a corolla whose limb is bright crimson and tube a buff-colour on the out, marked with dark spots on the inside. It is not nearly equal to *A. pedunculata ;* has flowered at the Tooting Nursery.

ÆSCHYNA'NTHUS HORSFIE'LDII. This is a species which has flowered at Pine-apple Place, the Messrs. Hendersons' Nursery. It is erect growing, of medium strength, having opposite oval-lanceolate leaves, and flowers whose corolla is much like in colour, size, and shape, that of the flowers of *Russelia juncea ;* they have long slender peduncles, and a deeply divided calyx, the segments of which are long and very much acuminated, and are borne at the axils of the leaves in pairs or upwards, very freely along the branches. It promises to be an abundant bloomer, is a native of Java, and new to our stoves within this year or two.

DIA'NTHUS HENDERSO'NI. The Messrs. Henderson have flowered a *Dianthus,* which bears its name in compliment to them. It grows from one to two feet high, flowers freely, and bears flowers of a very rich black-crimson colour.

FRANCI'SCEA AU'GUSTA. In general character this species resembles *F. acuminata,* but has larger leaves, and they are hairy ; the flowers also are larger, have a greenish-lilac calyx, and are borne in short racemes. It is of continental introduction, and has flowered in the Tooting Nursery.

GOMPHOLO'BIUM. Messrs. Knight and Perry have had in flower a very pretty species of this genus. It is slender-growing, covered with silky hairs, has partially pinnate leaves, whose segments are linear, and rather large yellow flowers borne in clusters of three or upwards, closely adhering to the branches.

Gladio'lus Ga'ndavensis supe'rba. A very superior variety, with much larger and more highly-coloured flowers than *G. Gandavensis.* It has recently flowered at Pineapple Place.

Marty'nia. In one of the greenhouses at Kew, a hardy member of this genus is flowering. It is annual, growing in small pots a foot high. Its leaves are opposite, somewhat cordate, very hairy, and its flowers very large and handsome, borne in terminal clusters ; their corolla has a rich purple-crimson limb, four-cleft ; upper segments lobed and darkest coloured, and the throat of the tube yellow.

Onci'dium oblonga'tum. Now flowering in the Hackney collection ; has rather large angular pseudo-bulbs, which are marked in mottled bands with purple in a handsome manner. Its leaves are rather long, and its panicle of flowers two to three feet high and upwards. Its flowers have pale yellow sepals and petals dotted at the base with bright brown, a large yellow-waved labellum marked also with brown at its base. It is a handsome species, flowering very freely ; was introduced from Guatemala by the Messrs. Loddiges, in 1840.

Potenti'lla Macnabia'na. A very beautiful *Potentilla,* a variety raised in Yorkshire, distributed through the London establishments by Mr. Low, of Upper Clapton, in whose Nursery it has flowered in a fine manner. In habit it does not differ from some other species, grows two to three feet high, has ample, numerous, radical leaves, and produces in great abundance its large, strikingly brilliant, orange-crimson flowers.

Plero'ma e'legans. Bearing this name, the Messrs. Veitch, of Exeter, sent early in the past month, to exhibit at the Regent Street Rooms, at a meeting of the Horticultural Society, which did not take place, a member of this genus, stated to be from Peru, erect growing, with short woody branches, opposite oblong-lanceolate channelled leaves, glabrous on their upper surface, and numerous terminal, large, vivid purple, charming flowers. It is a highly ornamental species.

Saurau'ja ma'crophylla. A stove plant under this name has flowered in the collection of the Messrs. Rollisson. It is an accidental importation, received from Mexico with *Orchids,* about two years ago ; has large, broadly-lanceolate, rough leaves, which have red petioles and midribs, and are beset with red pubescence. The flowers are rather small, white, very like those of a *Begonia,* and are borne freely in small panicles.

Scutella'ria macrantha. A species introduced by Mr. Fortune to the garden of the Horticultural Society, and has flowered there. It is a slender-branched dwarf plant, with subulate, opposite, hairy leaves, and pale blue flowers, the tube of whose corolla is whitish. It will doubtless prove sufficiently hardy to be a useful flower-garden plant, though at present it is kept in the greenhouse.

Tore'nia. This species was raised from seeds received from Arracan by the Messrs. Rollisson, and has flowered with them. Its disposition is partially climbing ; it is slender-growing, has small, cordate, opposite, serrated, purple-tinged leaves, and bears terminal and axillary, rather small, dark-coloured flowers.

OPERATIONS FOR SEPTEMBER.

There are few proprietors, and indeed managers of gardens either, who do not, as each year revolves, come to the laudable determination of carrying out some improvement or some little alteration to add an additional charm to, or at least to aid in producing a degree of variation in the scene whence so large a share of gratification and instructive pleasure, especially in the summer season, is continually being drawn. We are not anxious to make a few remarks upon this subject now, because it is requisite that measures of a practical nature, for the furtherance of the above object, must very soon be taken ; for we are too well aware, after the general flower garden may be said to have attained perfection, how soon such perfection is liable to be prostrated, to recommend any proceedings which interfere with the enjoyment of it, or shorten the period of its duration. There are, doubtless, instances where improvements or alterations of an extensive nature have to be completed or begun, which render it necessary they should earlily and earnestly be set about, and where energy should be the ruling principle of action, for reasons that must be obvious to every one ; but, as those cases just alluded to are the exception, and the kind of improvements under consideration the rule, we will return to the object in directing attention to them, which is that their result and probable effect may now be examined and studied, and their nature and extent decided upon accordingly. It is a peculiarly fitting time for attending to what we write of, because in the introduction of a new feature, or the removal of an old one, whether in the flower garden, the general grounds, or the landscape, at no period are more of those features present with which such alterations have to combine and harmonise than now ; hence, at once, a very cogent reason for attending to these hints.

In the parterre, we should embrace an opportunity of observing whether the present arrangement and combination of colours is capable of improvement ; whether the habit of this plant, the colour of the flowers of that, &c., afford satisfaction ; taking notes for our future guidance, and propagating a particular kind, or kinds, accordingly.

The main propagation of those plants, extensively treated of in our last number should not now require attending to ; where, from neglect or unavoidable causes, delay has overtaken it, all absence of further trifling must make amends. Continue to pot off, where it is the practice to pot them in the autumn, cuttings, as they become sufficiently rooted, and have recourse to all means which tend to hasten their becoming well established and hardened. After the middle of the month it is most advisable this kind of potting should be completed ; if it is not, it were better to allow the cuttings to winter in the pots, &c., in which they have been struck. The harvesting of seeds must still have necessary attention ; and also the increase of the more valuable and delicate hardy shrubs, as their annual growth becomes matured, and fit for propapation by cuttings or layering.

Such plants as experience has shown can be profitably lifted from the flower-garden to use another season, either because they can be preserved more conveniently, or from their flowering more profusely, should be guarded from chance of severe injury by frost, lifting them before the last consequence can ensue, as also before they are rendered very rank and succulent (and consequently much more difficult to preserve) by the moisture and rains that usually prevail late in autumn.

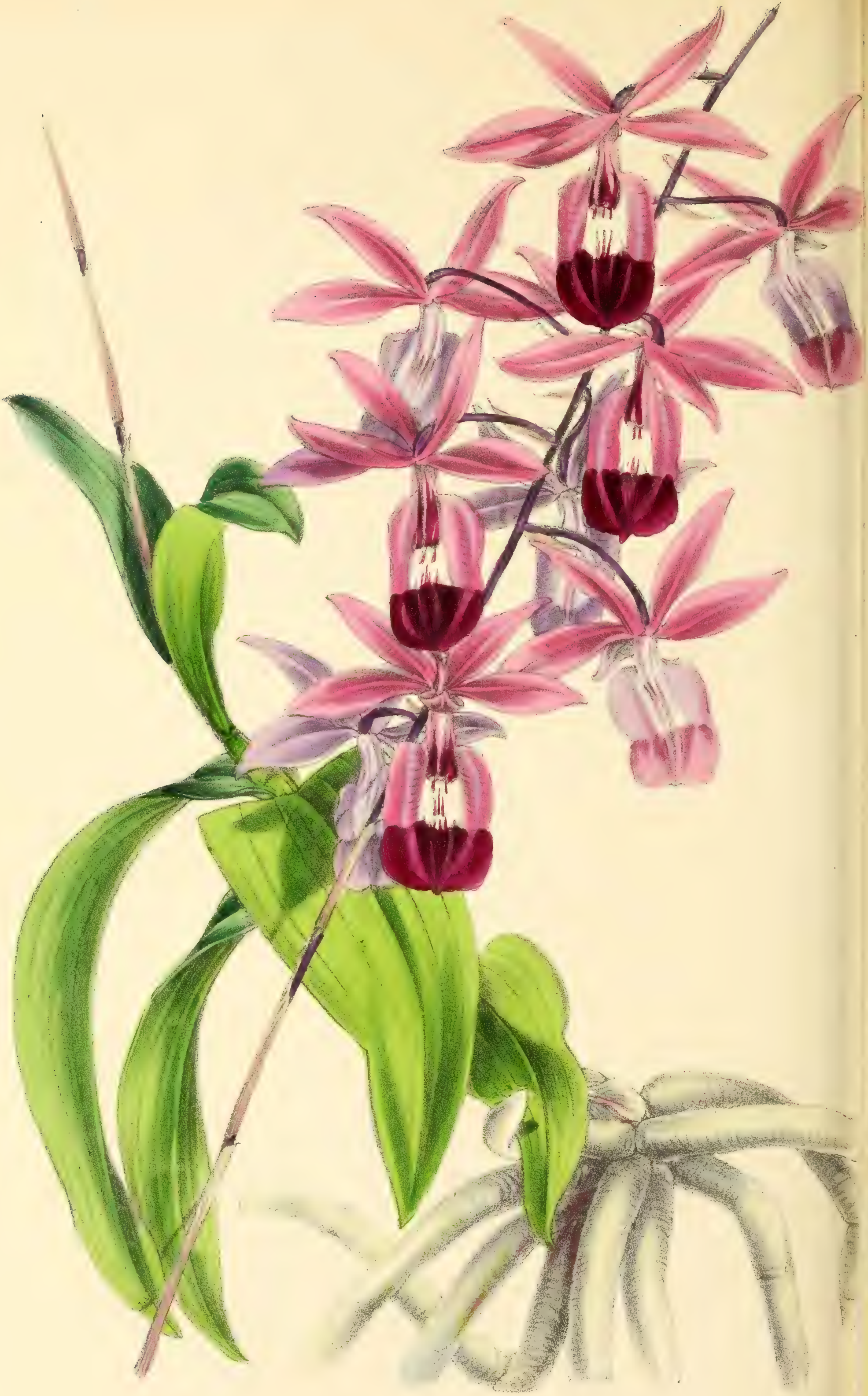
It is a frequent practice, and should be an invariable one, to plant in the open ground, in spring, many tender plants, which flourish and become beautifully ornamental through the latter part of summer and autumn; whether such have been turned out by way of experiment, whether with a view to create effect, or, it may be, because they have become too large to be longer conveniently accommodated, if timely and carefully lifted, and afterwards judiciously managed, they would help to relieve the dulness of the autumn months, in doors, by continuing to bloom. All their roots should be carefully preserved, and shade and a little heat afforded them, to recover the check they may experience in removing. Where it is not cared to deal with them thus, for the purpose in question, it is desirable to have them safely under protection as soon as convenient, to get them in a fit state to stow away in almost any place through the winter. Many such plants are more ornamental when planted out a second season than they are the first, from the healthy check removal is the cause of, rendering them more inflorescent. Any stove or greenhouse plants plunged in their pots in the open air, for the purpose of inducing them to bloom, will require soon again taking under shelter ; if it is found their roots have escaped through the pots, it may be worth while to put the plant, pot and all, breaking the bottom out, into one of larger size ; under such circumstances it would still be favourably situated for continuing in, or being thrown into flower. Exclusive of the plants considered in the foregoing remarks, there may be some, very handsome, of a more common description, that are equally worthy of being similarly treated, for the same purposes. Liquid manure will be found a valuable agent in assisting to restore the energy plants, under the foregoing circumstances, in some measure unavoidably lose.

Out of doors it should be the aim to prolong in the greatest perfection the floral season. There may, of course, influences prevail, over which no human control can be exercised, but, even when these interfere, much may be done in furtherance of our purpose. It must not be thought too much labour to have at command instruments of protection against early frosts, and in some instances heavy and much rain, to be employed in the case of particular masses of and individual plants. It is well worth while doing this, for painful experience has taught us that a few hours' frost only often occurs in the beginning of the month, and is succeeded by weeks of weather remarkable for its absence, and which at once destroys the chief beauty of the flower-garden, if no steps are taken to ward off or afterwards counteract its injurious effects. Have regard to general keeping : there are now more decayed flowers and herbaceous stems to remove, more thinning and shortening the shoots of masses of plants than hitherto, more frequent dressing and cleaning in general to attend to ; the falling leaves also begin to be somewhat troublesome ; their presence must, notwithstanding, continually be dispensed with. Do justice to all late-flowering plants, not permitting them to suffer for the want of good management ; encourage and stimulate them to bloom, and display it to the greatest advantage. *Dahlias* are in their prime this month ; let them have requisite attention accordingly ; be well secured against injury from wind, and have insects which despoil their flowers entrapped. Proper cuttings will readily strike in gentle heat now, and plants of the rarer kinds should be so raised, as they can be kept where security from frost is certain, and that is not always the case with the main tubers. In saving seed for raising new varieties, choose that of semi-double flowers, such as have good petals, and are good and pure in colour.

Towards the end of the month those beds in the flower-garden, if free from the present occupants, which it is proposed to fill with plants or bulbs, to flower in winter or spring, may be broken up and occasionally stirred, to expose the soil to atmospheric influences to the greatest extent previous to their being planted. The preparation of beds for *Tulips*, and other things of a similar and choice description, must also be thought of.

In the plant domain, presuming the erections which are at once their refuge and home have undergone the usually necessary painting, cleaning, &c., and the heating apparatus put in order, those plants which have been placed in the open air may begin to be returned to their winter quarters. But the state of the weather will best regulate these proceedings. If heavy rains or cold is predominant, the various collections must be housed without delay ; if the reverse is the case, the end of the month may arrive and find the last instructions unheeded. When the general housing does take place, the plants at first must be favoured with all the air that can be given them, and not have the least superabundance of moisture. The same principle of treatment may be extended to all plants, save those which are actively growing. *Orchids* are greatly benefited by free exposure to light and air, in favourable weather, at this season. Behave kindly to the inflorescences of this tribe, as indeed to that of all plants. Diligently exterminate all insects, as the various plants which may be affected with them are arranged in their winter quarters. The tops of *Chrysanthemums* struck from cuttings, or by layering, early this month, form pretty dwarf-flowering plants.

The end of the month may find some bulbs potted for early flowering, and a few *Pinks*, *Roses*, &c., put to be gently forced. Pot, or plant in beds, *Carnation* layers, young biennials raised from seed, struck hardy perennials, &c. Avoid stimulating all plants to grow which should be at rest, and induce those which may be growing to cease doing so as soon as it can safely be done.



S. Holden del. & Lith.

Barkeria Lindleyana

BARKÈRIA LINDLEYÀNA.

(Dr. Lindley's Barkeria.)

Class.
GYNANDRIA.

Order.
MONANDRIA.

Natural Order.
ORCHIDÀCEÆ.

Generic Character.—*Sepals* and *petals* equal, free, membranaceous, very spreading. *Labellum* smooth, entire, naked, cuneate and pointed, pressed close to the column. *Column* petal-shaped. Anthers four-celled, fleshy. *Pollen-masses* four, with as many ligulate reflexed caudiculæ, connate in pairs.

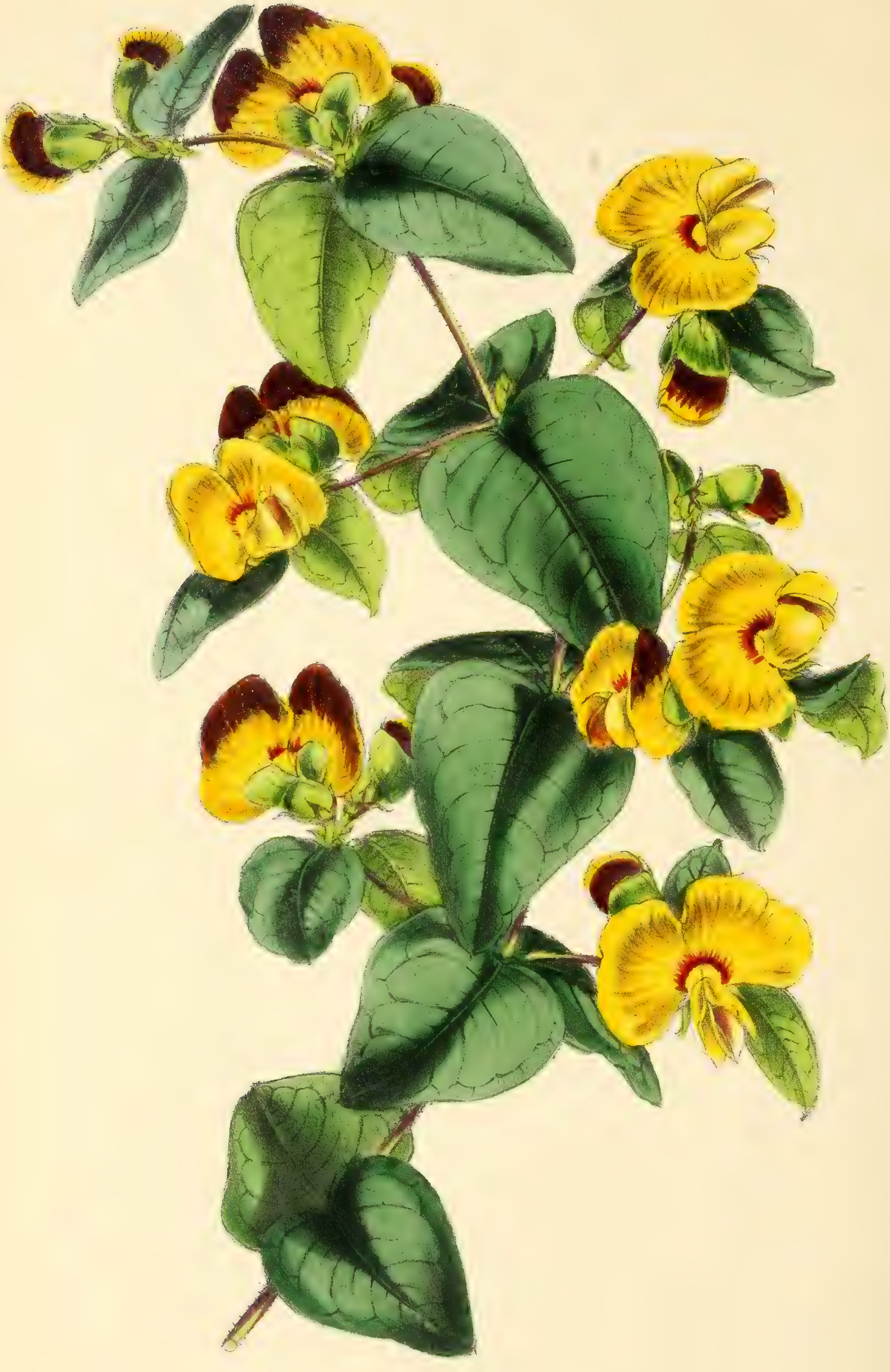
Specific Character.—*Plant* an epiphyte. *Leaves* oval, acute. *Bracts* linear, much shorter than the peduncle. *Labellum* exactly oblong, apiculate, bicarinate, with the keel placed near the apex of the lip. *Column* clavate, winged, immaculate; apex three-toothed.—*Bot. Reg.*

An idea of the estimation in which this plant is held will be formed when it is stated that it was deemed a worthy subject, one of forty, to occupy a page in Mr. Bateman's work on the Orchidaceous tribe. Unlike some of its associates portrayed in that noble volume, such as *Lycaste Skinneri*, &c., it is not free to grow and furnish the means of increase, therefore is still, comparatively, quite a rare plant. It is a native of Costa Rica, where it was found by Mr. Skinner, and sent to Mr. Bateman, with whom it first flowered in the country in 1841. The latter gentleman named it in compliment to Dr. Lindley, who, in the "Bot. Reg." for 1842, writing of its botanical peculiarities, says:—"This beautiful plant has exactly the appearance of *Epidendrum Skinneri*, with which at first sight it would perhaps be confounded. It appears, however, to be a *Barkeria*, as far as that genus has any character to separate it from *Epidendrum;* that is to say, it has the winged column, and the labellum with a thin membranous border down far below the head of the column. It is however to be observed, that in the original *Barkeria* the labellum was free and sessile, while in the present species it has a distinct *unguis* connate with the base of the column."

When not in flower, like numbers of the *Orchid* family, it is an insignificant looking thing. Its stem-like pseudo-bulbs bear a good many leaves, but are not generally more than six or eight inches high; from their summit, when in a young state, ascends the flower-stem, one foot to eighteen inches, bearing on its upper portion the flowers, which are not produced at any particular season, and remain a great length of time in perfection. Our drawing was taken from a plant, blooming among Mrs. Lawrence's Orchids last December.

There is no better criterion of how congenial to the welfare of the superior *Orchidaceous* plants is the temperature, &c., of a house in which they are growing, than the circumstance of the lovely *Barkeria*, and such plants, flourishing in it. It is usual to grow *B. Lindleyana* in an openly-formed rough wooden basket, loosely filled with fibrous peat, potsherds, and sphagnum moss, or to attach it to a naked block of wood. A temperature moderately warm and moist when growing, and cool and proportionately dry when the plant is in a state of rest, is necessary to its welfare. It is increased in the usual way, that is, by detaching the pseudo-bulbs from each other about the time they burst into growth.

The genus is founded on *B. elegans*, and compliments the late G. Barker, Esq., of Springfield, near Birmingham, a celebrated grower of *Orchids*.



S. Holden del. & Lith.

Platylobium formosum.

PLATYLÒBIUM FORMÒSUM.

(Beautiful Flat Pea.)

Class.
DIADELPHIA.

Order.
DECANDRIA.

Natural Order.
LEGUMINÒSÆ.

GENERIC CHARACTER.—*Calyx* bracteate, bilabiate, upper lip bifid, roundish, large. *Stamens* all connected. *Legume* pedicellate, compressed, flat, winged on the back, many-seeded.

SPECIFIC CHARACTER.—*Plant* a rather tall shrub, evergreen. *Leaves* ovate, somewhat cordate; *ovary* vilious; *bracteas* silky; *stipe* of *legume* shorter than the calyx.—*Don's Gard. and Botany.*

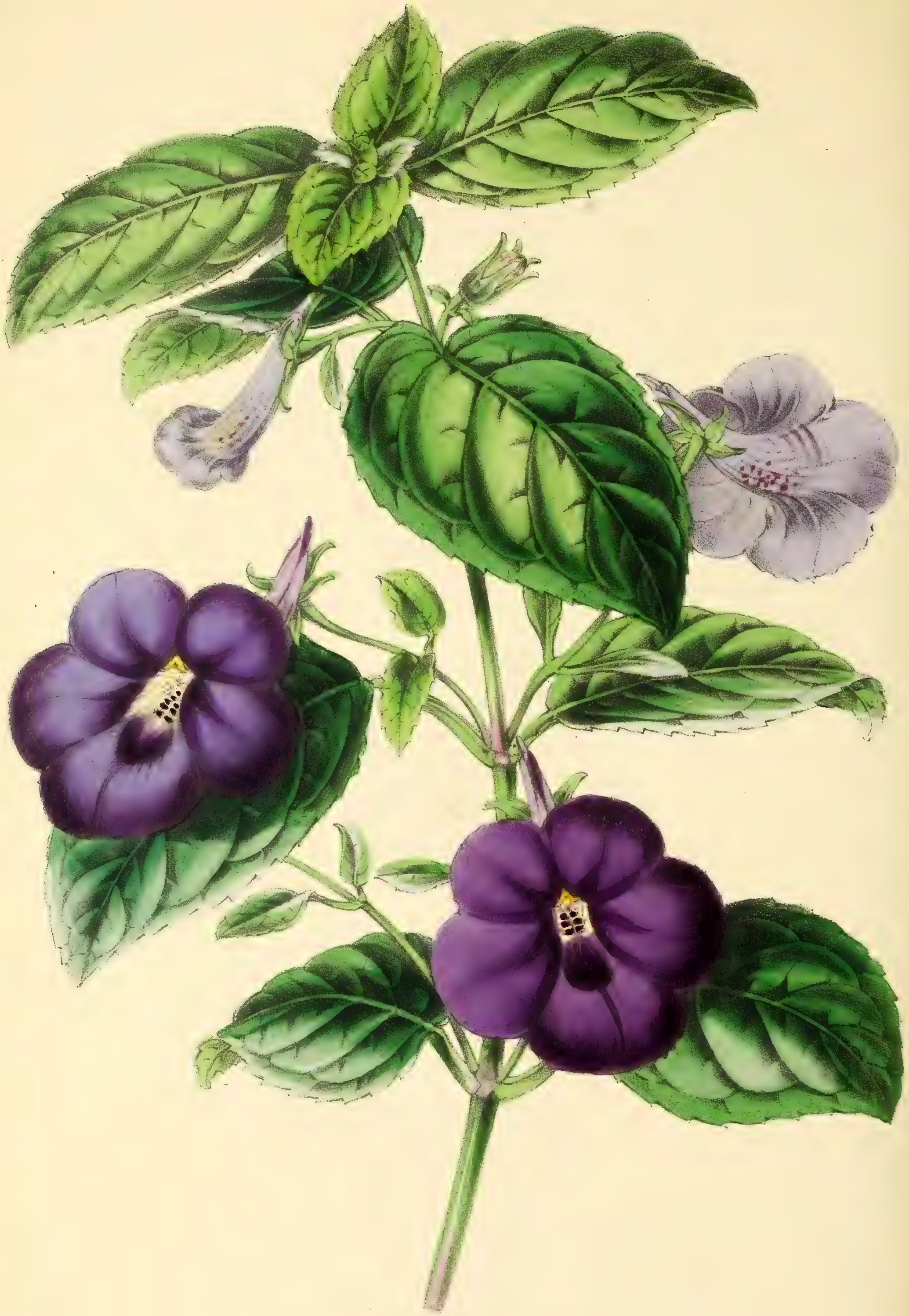
SYNONYME.—*Cheilococca apocynifolia.*

THE genus *Platylobium*, consisting, at present, of less than half a score members, was established in 1794, by Dr. Jas. Edw. Smith, President of the Linnæan Society, on the species whose representation is now before us. New Holland and New South Wales, the sources whence come so many of our beautiful greenhouse plants, furnish this also; and although it may be said of its flowers, that they are characterised by the prevailing fault of those of the greenhouse section of Leguminous plants—are yellow—it is less the case with them than with the flowers of numerous genera and species in the Order; for, in addition to having the base of their vexillum tinged with red, similar to the blossoms of each of the *Platylobiums*, it is strongly coloured on the outside with rich brown, as shown in the plate. Spring and early summer is the period when its inflorescence is borne, and it is produced in great abundance.

Disregarding any feature in the character of this plant, but that which constitutes it a handsome evergreen, there is sufficient to render it worthy of culture. Its leaves are of a peculiarly regular and neat shape, and some of them very singular for their large size, considering how uniform they are in other respects. It is not conspicuous for any particular style of growth; the plant which furnished the branch our drawing was taken from, was a rather large specimen, flowering in spring, in the collection at the Exotic Nursery, with strong central, and many less vigorous outer branches, rising from one base, and throwing out laterals abundantly. The annual growth of young plants is very considerable, therefore much attention to training is requisite; and the more so in consequence of the branches attaining a good length, and producing laterals most freely towards their points. Properly shortening such branches is the remedy to prevent specimens becoming straggling and ill-formed; but it must be practised in the early stages of the plant's growth, as well to effect the desired object as to permit the newly-forming wood time to get well ripened, the flowers of the succeeding season being borne by it.

It is a very interesting business, but certainly demands much attention and a good deal of skill, to train greenhouse plants so that they always keep in a pleasing shape. We meet with them generally either forming too dense bushes, or they are much too open. The size of the leaves of each species, and its style of growing, should regulate the matter; whatever may be the dimensions of the former or the character of the latter, they ought never to be more abundant on the one hand, than that each branch, and, it may be, each leaf, seems at ease, and quite free of its neighbour; on the other, no greater space should be allowed to every branch than it can fully occupy. The care usually bestowed on greenhouse plants, as to the selection of soil to grow them in, their increase, &c., is sufficient for *P. formosum.*

Platys, broad, and *lobos*, a pod, in reference to the broad legumes, is the origin of the generic name.



S Holden del & Lith

Achimenes patens

ACHIMÈNES PÁTENS.

(Spreading Achimenes.)

Class.
DIDYNAMIA.

Order.
ANGIOSPERMIA.

Natural Order.
GESNERÀCEÆ.

Generic Character.—*Calyx* with its tube adnate to the ovary; limb five-parted; lobes lanceolate. *Corolla* tubularly funnel-shaped, often swollen at the base; limb five-cleft; lobes sub-equal, subrotund. *Stamens* four, didynamous; anthers not cohering. *Rudiment* of the *fifth stamen* situated below the base of the corolla. *Nectary* glandular, in a small ring. *Style* slightly thickened towards the stigma, oblique, or with two separate lobes. *Capsule* nearly two-celled, two-valved; placentas parietal, sub-sessile.

Specific Character.—*Plant* perennial. *Roots* tuberous. *Stems* herbaceous, somewhat erect, pilose. *Leaves* opposite, ovate-acuminate, serrate, hispid above; with rather unequal *petioles*. *Pedicels* longer than the calyx. *Calyx* pubescent. *Corolla* violet-coloured, saccate; *tube* shorter than the limb-lobes; *limb* very spreading; *spur* conical. *Stamens* four times the length of the spur. *Stigma* somewhat equally bilobed.

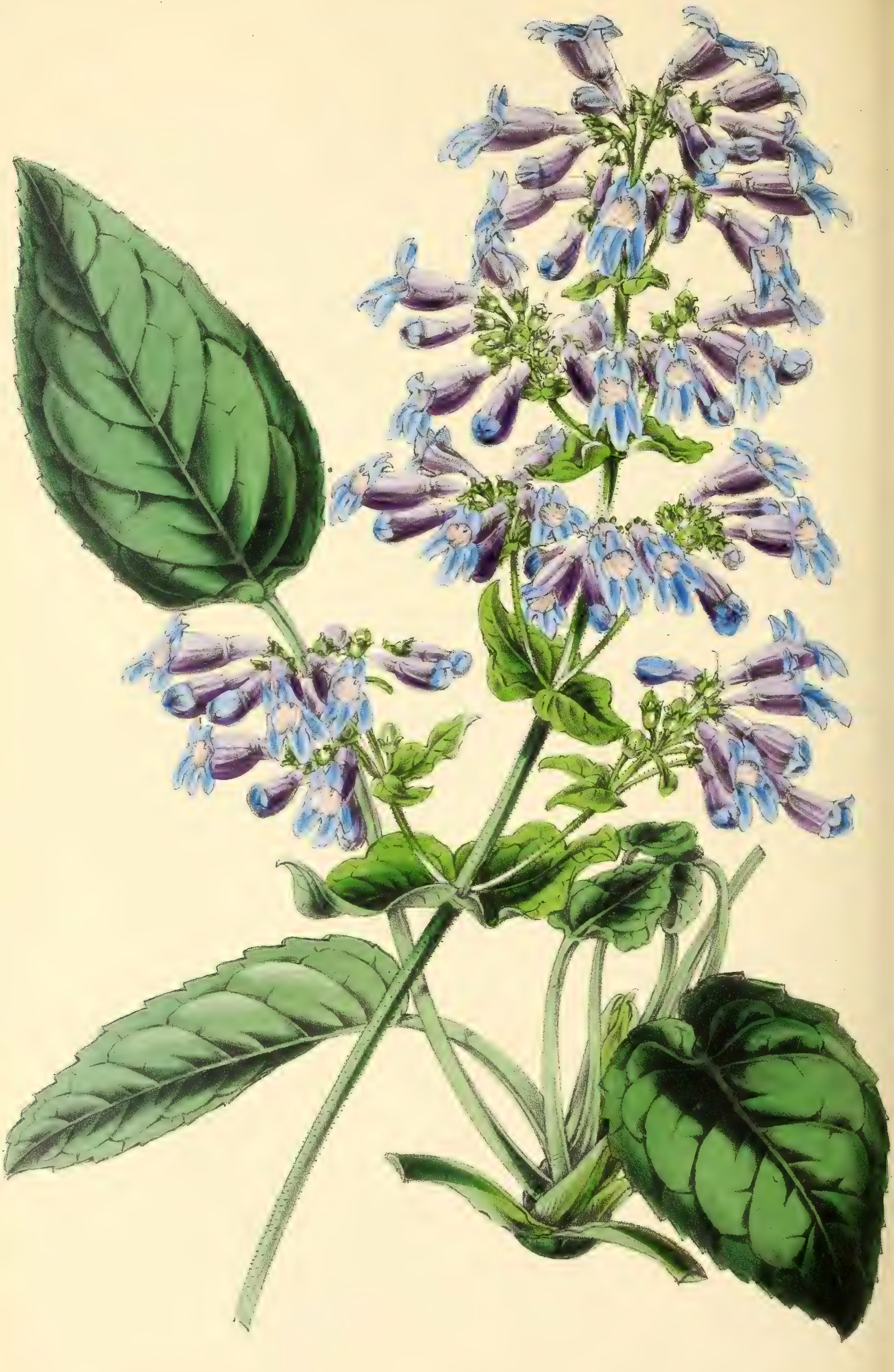
Some account of this plant is given at page 141; in a notice of it there, we have accidentally stated that it resembles *A. grandiflora* instead of *longiflora* in *habit*. Further intelligence of its history is contained in the following, from the pen of Mr. Hartweg, who discovered it, extracted from the "Journal of the Horticultural Society." Proceeding on a second botanical mission, Mr. H. arrived in the city of Mexico on the 3rd of December, 1845; after remaining there two days, he writes:—"I left for the Hacienda de Laureles, near Anganguco, where seven years previously I found *Achimenes patens* and *heterophylla*, the objects of this journey. Notwithstanding I recollected the locality where I saw them in flower in September, 1838, yet I had great difficulty in finding the roots, for not a leaf, however shrivelled up, could be seen. Under these circumstances I consider myself very fortunate in having found roots of some species of *Achimenes*." The roots mentioned were wholly those of *A. patens;* from them plants have been raised, and very extensively distributed by the Horticultural Society.

Mr. Theodore Hartweg, whose eminent success as a collector is so well known, forwarded plants of this beautiful species to England on first discovering it; but they were not received alive. With respect to its value, it is at once a distinguished character, and sufficient recommendation, for a new member of so highly esteemed a genus of plants as that of *Achimenes*, to state that it is equal to those of its congeners, to which it is most nearly allied, which is truly the case in the present instance, *A. patens* being as easily cultivated, growing, flowering, and propagating with all the freedom of other species. It has not yet exhibited that luxuriance those long cultivated in our gardens display, which is easily accounted for when it is remembered that scarcely ten months have elapsed since the parent roots were taken from their native earth in Mexico.

Much importance is generally attached to the ease with which several of the *Achimenes* can be induced to flower in winter, and indeed it is a considerable augmentation to their value that they can; but it must not be concluded that they are peculiarly suitable for that purpose; for their value in that respect only arises from the fact, that every vestige of a flower becomes of consequence in winter. *Achimenes* cannot be seen in their true beauty in winter, because the natural warmth, full light, and stimulating influences of spring and summer are requisite to bring out their real loveliness.

Good light soil, and not a large body of it, seems to suit *Achimenes* best. We have seen no better specimens than those which were growing in shallow pans. A plant flowering in June last, at the Messrs. Rollisson's establishment, formed the subject of our drawing.

The derivation of the generic name is unknown. Mr. Bentham is the author of the specific.



S. Holden. del. & Lith.

Pentstemon ovatum.

PENTSTÈMON OVÀTUM.

(Ovate-leaved Pentstemon.)

Class.
DIDYNAMIA.

Order.
ANGIOSPERMIA.

Natural Order.
SCROPHULARIÀCEÆ.

Generic Character.—*Calyx* five-parted, with a distant, solitary bractea. *Corolla* ventricose, bilabiate. *Stamens* didynamous, with the rudiment of the fifth, which is usually filiform, and bearded on the upper side; *anthers* separate, usually glabrous. *Capsule* ovate, two-celled, two-valved, many-seeded. *Seeds* angular.

Specific Character.—*Flowers, stems,* and *peduncles* clothed with glandular hairs. *Leaves* ovate-cordate, stem-clasping, glabrous, coarsely-toothed; *lower ones* on long petioles. *Peduncles* axillary, subcorymbose; *upper ones* short, and appearing as if they were verticillate. *Corolla* tubular. *Sterile filament* bearded at top, and unidentate at the base.—*Don's Gardening and Botany.*

What are generally understood as hardy herbaceous plants have been rendered quite unfashionable, and comparatively useless, since the now prevailing method of flower-gardening—filling the beds of the parterre with plants almost always of one kind, and invariably with those bearing flowers of one colour—was introduced. Distinguished as is the modern system, by its advantages and superiority, from the ancient order of things, still it is not fair that it should have chased hardy herbaceous plants wholly from our gardens. As a whole, they do not deserve putting entirely on equality with those which have superseded them; but there are many which merit equal attention, and which, were they favourably treated and grown in a proper situation, would afford an unlimited degree of satisfaction.

The above remarks apply to hardy herbaceous plants in general, and are not required to introduce a member of a genus whose ornamental character is familiar to every one; nor would they have been employed on the present occasion, were not our plant strictly an herbaceous species, and its flowers smaller than those of *Pentstemons* usually are; but any defect arising from the latter circumstance is fully atoned for by the great number of blossoms, and the large size of the panicle by which they are borne; (a part of it, the upper portion only, is shown in the plate;) this latter feature, however, as well as the proportion of the whole plant, is materially influenced by the usage it meets with: a rich soil, unrestricted root-room, &c., in the growing season, produces a great increase in its size, and in all such plants such a result is of considerable consequence in some cases.

P. ovatum was discovered many years ago, by Douglas, inhabiting limestone rocks, on mountains about the grand rapids of the Columbia, in Northern America, and sent to the Horticultural Society. It flowers the greater part of the summer, and is easily increased by seeds or division of the plant. It may be grown on a rockery, the smallness of its flowers rendering it an appropriate associate for alpine plants, or planted in a shrubbery border, and encouraged to grow strongly, thereby enabling it more creditably to occupy a position there. We are indebted to the Messrs. Chandler, of Vauxhall, for the opportunity of preparing a drawing.

Pentstemon is from *pente*, five, and *stemon*, a stamen, there being five of those organs in each flower,—four perfect, and one imperfect.

DISEASES AND AFFECTIONS OF PLANTS.

The subject, though not perhaps very appropriate to a work peculiarly devoted to scientific floriculture, becomes the more interesting at a period when the whole kingdom rings with exciting accounts of the potato disease, now unfortunately recurrent for a second season, and it is feared under more aggravated circumstances.

In a very early number of this Magazine, there was a notice of an erudite paper upon a similar subject, read before the Caledonian Horticultural Society. Under the head *Parasitical Plants on Leaves*, there are the following remarks, which are extracted *verbatim*:—"Leaves are liable to become attacked by various cryptogamic plants, from circumstances not well ascertained. The most familiar of these diseases is known by the name of *mildew* (*Sporótrichum macrosporum*) which is at once observable by the white appearance it presents on the leaves. Certain circumstances seem particularly favourable to its appearance, as cold, dry weather, and particular exposures—plants under the shade of others, or otherwise shaded, apparently suffering more than those fully exposed. From microscopical observation, this parasitical plant, constituting *mildew*, seems to be composed of globular semi-transparent masses, apparently sometimes attached to a stalk, sometimes to hairs on the plants, or collected into heaps on the surface of leaves and stems."

The correctness of the above may be disputed so far as concerns the name—since *Sporótrichum* is not now considered a *mildew*:—it is placed in Loudon's catalogue of Fungi, at page 1038 of the Encyclopædia of Plants, Genus 2478, Species 16,569, under the division 11—*Mucedines*; whereas the true mildews (*Erycibe*) rank under Class 4, *Scherotiacei*, page 1020. In the list there given, the most familiar species are the *Erycibe pisi* and *E. Loniceræ*, the mildews of the pea and of the honeysuckle. These parasites appear as a white mealy suffusion, and under a high magnifying power are found to consist of a network of white, semi-transparent threads, crossing and intersecting, perhaps by anastomosing processes, in all directions. The effect produced upon the pea in autumn, is remarkable; fructification is arrested, and though the plant is not destroyed, yet its vital powers are entirely paralysed. The great question of inquiry, and which, as yet, has never been satisfactorily met, is this:—Does the condition of the plant, as to change or disease, induce the mildew; or does the parasite, at its appointed season, fix itself upon its victim, and weaken its vital power? In other words, which is the *cause*, and which the *effect?*

In the potato disease, at that stage of it which is characterised by the dark spot, or blotch upon the leaf, a white mealiness is suffused around the spot, extending far beyond it, upon the yet green surface, and always on the under side of the leaflet: there is no mealiness upon the upper surface, nor any, so far as individual observation can be taken in evidence, upon or near the discolorations of the stems. This white matter, if carefully removed by dissecting off a thin transparent portion of the cuticle, forms, under a powerful lens, a most beautiful object: there is the network, like a web, already alluded to; but in addition, many series of delicate cellular stalks are seen ascending, as from a common centre, and some of these support at their points little oval spores. It is requisite to throw a strong light from a speculum, beneath, and by this aid these fibres, or stems, if moistened by the breath of the observer, are seen to be hygrometric, insomuch that they revolve, forming upon their centre of motion regular circumgyrations, during which movements several of the spores explode.

It is not here necessary to investigate the causes of a malady which has occasioned, and still produces so much solicitude; but as the phenomena appear to be altogether new, and so many hypotheses have been hazarded to account for what lies buried in mystery, it may not be irrelevant to make some allusion to them. Most writers who look upon the disease as the result of a *fungus*, have referred to the genus *Botrytis*, No. 2481 of Loudon's Catalogue, so called from the clusters of globular seed-vessels which are attached to the fibres. The question is one of extreme difficulty; but whatever may be the genus of the parasite, if we admit that the potato disease depends upon such a cause, the activity of the poison is beyond all precedent. The suffusion of meal extends a few lines beyond a black spot, but is traced no further; yet the plant is completely destroyed in a few hours, and becomes entirely decomposed, precisely the same in degree as if it had been sprinkled by a corrosive or boiling fluid, emitting, at an early period, the odour of frosted kidney-beans. Is there, then, upon record one solitary fact which tends to prove that any living vegetable has been destroyed by a process so deadly, as that which has now been going on during many weeks, under the ascribed agency of a fungus?

MOULD—MOULDINESS. This forms, or is deposited, it should seem, upon all *organic matter*. Organised substances, whether living and growing, or deprived, to all outward appearance, of the vital principle, are redolent of life; and mould as certainly is deposited upon a piece of leather as upon and round the wounded peel of a plum, a pear, or an apple which has been pierced by an insect. Where shall we look for the exciting cause? Do the vitalised atoms (*spores*) of *Erycibe*, *Urédo*, *Æcídium*, *Puccinia*, &c., &c., which fix and prey upon the vegetables of the garden, the cereal crops of the farm, and the leaves of ornamental plants, float in the air, and in due season attach themselves, each to its appropriate medium of support? or does the altered condition of the plants, or other organic body, under the influence of the great natural agents, give birth to, or bring to light as *educts*, the several genera of this lowest order of the vegetable creation? The inquiry may be useful: it may indeed reveal the proximate causes of phenomena which are as yet involved in mystery; but in the present state of our knowledge we can only presume that mildew and other minute fungi originate in a changed or diseased condition, but that they are not in themselves the primary exciting causes of disease.

Dr. Liebig has said, "The microscopical examination of vegetable and animal matter in the act of fermentation and putrefaction has lately given rise to the opinion that these actions themselves, and the changes suffered by the bodies subjected to them, are produced *in consequence of the development of fungi*, or of microscopical animals, the germs or eggs of which are supposed to be diffused everywhere, in a manner inappreciable to our senses: they are supposed to be developed when they meet with a medium fitted to afford them nourishment. Several philosophers have ascribed to this circumstance the fermentation of wort, and of the juice of the grape."

As to the remedy, we know of none that is worthy of reliance. Sulphur (flowers of brimstone) forcibly driven over peaches, or their leaves, by a spring puff, with a fine wire-gauze orifice, is stated to be effectual; but we cannot vouch for the certainty of the remedy, nor yet for that of the *sulphuretted wash*, made by pouring a gallon or two of boiling water upon a pound or more lime, unslaked, and fresh from the kiln, mixed with four ounces of sulphur. The yellow fluid—a sulphuret of lime—syringed, when cold, over mildewed leaves, or into the hearts of pine-apple plants infested with the scale, is certainly remedial to some extent, but cannot be regarded as specific.

Enough, perhaps, has been written upon the subject of parasites to arouse a spirit of more active research; and as something remains to be said upon the attacks of frost, and of insects, we offer the following observations:—

The present year has been as remarkable for its meteoric phenomena as was its predecessor. The winter of 1844-5 was rigorous almost beyond precedent, and consistently so, till the 20th of March. The whole of the corresponding period of 1845-6 was mild to such a degree as to permit the *Fuchsias* of the open garden to push new flowering shoots from the old stems, without covering or protection of any kind. These are great enjoyments in a mild winter, particularly if January be dry and sunny, as it occasionally is in our southern counties; operations of all kinds can then be performed, ground prepared, and (what is a great comfort) the forcing gardener is relieved in one of his most arduous duties—*night-forcing;* but winters of so mild a character as that of the present year, have their disagreeable contingencies; and the first we shall allude to is the injury to tender, early developments, by a sudden access of frost, though its duration be that of a few hours only. Thus, after an average temperature far above that of freezing, with blossoms fully expanded, a frost of 6 degrees, on the 19th morning of March, paralysed all the plum and apricot bloom, and produced a total loss.

The second severe infliction was the attack of *Aphis* or green-fly on the *Rose*, which, during two months, converted the bushes and standard trees into masses of deformity. We have before seen the plants ravaged to a vexatious extent, but never can we retrace anything of the kind so pertinacious. Upon this subject we have nothing to advance theoretically, as to *causes;* and the effects speak for themselves. As a remedy for every species of the ordinary Aphis of the garden and greenhouse, the gardener may place confidence in tobacco smoke, provided he can efficiently apply it; but there lies the difficulty. So long as a house or pit can be closed, and its apertures of exit stopped, the results of filling the erection with smoke of black shag tobacco rarely admits of doubt; but in the open air, unless each plant be covered with a close hood from top to bottom, the mere propulsion of smoke is of little avail. Strong infusions of tobacco, and a liberal dusting with potent Scotch snuff, will in a degree relieve, but both the one and the other may injure, and certainly will disfigure, the blossom and foliage. Perhaps early and repeated close prunings-back to a clean bud would be the best remedy—one which would retard the season of bloom till that of the insects had passed by. But another and very clean application has been recently urged, namely, a watery solution of *sesquicarbonate of ammonia* (common smelling salts).

This suggestion must be met, first, by throwing a doubt upon its efficacy, unless it were applied so strong as to destroy the plant itself; and secondly, by reminding the gardener that, unless he project the fluid forcibly over and among every leaf or mossy integument, by the syringe, he will fail to destroy the pest; but in a chemical point of view the attempt will ruin the instrument, since ammonia, either pure or as carbonate, or sesquicarbonate, will infallibly act upon the copper and brass, and produce a solution of ammoniuret, which is colourless till it become *blue* by exposure to air. Thus the syringe will be corroded, and rendered useless.

Sesquicarbonate of ammonia dissolves in somewhat less than four times its weight of water, heated to 60 or 65 degrees; its price varies from 8*d*. to 1*s*. 3*d*. per lb., and therefore might easily be found expensive; for a weak solution, *i.e.*, of 1 oz. to the quart, could be of little avail. As to the caustic liquor of *pure* ammonia, it would prove fatal; a *Gardenia radicans* infested by the scale was put under a bell-glass, and with it about a tea-spoonful of liquor ammoniæ fortis; the foliage in a few seconds became of an intense blue-green, beautiful in appearance; the glass was raised and the plant removed; but its change was mortal.

Plants are susceptible of poisons. A small orange-tree, alike infested, was lightly brushed over the stem and the axils with a weak solution of arsenic; it was killed almost immediately. The change was exceedingly rapid.

Two species of Aphis are not easily assailable by tobacco; the one is the black aphis of the cherry-tree, which covers and much injures the summits of young shoots. A simple but effective remedy is found in a sort of batter, made with stiff soil or clay and water. By dipping the infested parts of the tree in this "slip" (as it is called in the potteries) till they are coated with it, the insects are cased, and entirely destroyed. The black Aphis of the garden bean is much checked by the simple and usual operation of topping.

The red spider (Acarus) is most mischievous, particularly with such plants as Thunbergia, and the kidney bean. The name is given alike to every variety, whether the insect be white, brick-red, or black. It punctures the undersides of the leaves, arrests their growth, and entirely changes their colour. Sprinkling, and a highly vaporous atmosphere, are the best applications. Of *sulphur* as a wash, and in the form of vapour, raised by sprinkling brimstone on the warm flues, much has been said and written. There are antagonist opinions; but without attempting to deny *in toto* the utility of sulphur, it is highly probable that far too much has been stated in its favour. Bruised laurel leaves, if inclosed with an individual plant, may be an active remedy. It was once tried with a *Thunbergia*, inclosed, and then appeared to act powerfully in dislodging the Acarus; but general proof is wanting.

Further remarks must be postponed.

REMARKS ON THE PELARGONIUM.

Of all the very splendid productions which appear at the great metropolitan Exhibitions, perhaps there is none that attracts greater—certainly nothing that elicits more universal admiration, than the *Pelargonium.* It is a matter of perfect wonder to the generality of observers how it can be brought to a state of almost absolute perfection; and they conclude, we have no doubt, that the result they witness is the effect of some peculiar treatment—is due to some mysterious agency, into the secret of whose nature and worth few only are initiated. Be this as it may, one of our own objects in this paper is to remove such a notion where it exists, by directing attention to that part of the management of *Pelargoniums* on which such perfection is principally dependant. Into any detailed method of their management we do not meditate entering, that having been done in a former volume; our present remarks will be confined to a few points hitherto little regarded, as far as a broad consideration of them is concerned.

Our admiration of the *Pelargonium*, as it appears under the circumstances already mentioned, is not confined, or scarcely directed to the effect created by a collection as a whole; their merits as individuals, principally with respect to the regularity they exhibit, the uniformness with which their branches are disposed, and handsome trusses of bloom produced, is the criterion by which we are guided in forming an estimate of their perfection. But it is the cause of this perfection—the means by which the end is attained—with which we wish to deal. What then is it? In addition to the propriety of not suffering the *Pelargonium* to lack the application of any of those auxiliaries, every gardener knows, or ought to know, is necessary to the health, growth, and well-being of all plants, such as good fresh soil, pure air in sufficient abundance, &c., as helps to produce what is sought to be attained, and the avoidance of uncongenial influences, whether arising from accidental or natural causes, which tend to prevent what we aim at; we have no hesitation in pronouncing *training*, in connection with what we shall presently refer to, to be the instrumentality through whose effect is accomplished what every one cannot fail to admire. It is quite certain the operation wholly conduces to produce the form of the plant, and that, without any demur, it will be admitted is a corner-stone in the production of its beauty. But it does more.

The *Pelargonium*, all know, is a succulent thing; leave it to itself, whether it be in a pot or in the open ground, and let it have that which will enable it to grow, and it will become rank; two or three ungainly branches will assimilate to themselves the energy of the whole plant, neither branching laterally nor producing flowers regularly, nor in abundance. Resort to training, properly apply it, and it will make this apparently unkind feature in the plant's character subservient to a good purpose; first, in creating a greater number of branches to occupy its natural vigour; and secondly, by causing what constitutes that luxuriance, the superabundant juices of the plant, to circulate in more circuitous channels. But, is good training of the *Pelargonium* an easy task? To this we answer, the object sought in carrying it out cannot but render it a pleasing one, and at most it is but a matter of mere labour, that almost any one may perform, that does not exhaust the physical man, but that requires untiring patience and great care to direct it successfully. Much depends, in point of difficulty, upon the style of training pursued: equal development of branches, of a uniform strength in every part of the plant, is generally sought, but the shape in which they are arranged depends upon the taste of the person who may be training. The shoots of nearly all *Pelargoniums* naturally grow erect; therefore an attempt to induce them to assume any other direction, especially a descending one, very materially increases the difficulty of training—the brittleness of the branches being the chief cause of that increase.

The maturity of the plants is the other principal cause which assists to render them perfect as regards the production of bloom; and they are brought into a mature state, as may be imagined, by age; but then, it may be asked, do not old plants become inconveniently large? They of course have a tendency to become so, but nevertheless can be, and are, prevented, by good management, from acquiring dimensions proportionate to the number of years they are kept. We do not approve, but condemn, as formerly, the practice of maintaining two or three large plants of any kind, on account of their size alone, in preference to twice that number, less in dimensions, but not in beauty, and which can permit the charm of greater variation to be added. It is by proper pruning that *Pelargoniums* are kept in bounds as to dimensions. If we look into the establishments of the great growers at this season of the year, we find numbers of plants having exactly the appearance of ancient forest-trees in miniature, or like those diminutive representations of the same the Chinese are so skilful in producing, both as to the number and gnarled forms of their ramifications.

The foregoing remarks on the *Pelargonium* have had prominence in our article, because they relate to that part of its management upon which, as before stated, success in a great measure depends; a proof of which is, that no one finds any difficulty in inducing it to flourish and bear flowers; but the manner in which it does so of itself, or under ordinary circumstances, compared with the way it can, by the expenditure of a little labour, be made to do, is almost incredible. The good cultivation of the *Pelargonium* is a matter of more consequence than may be imagined; for we have met with many places where it is the only plant grown to display its beauties in pots.

Pelargoniums—the fancy kinds we still write of—are almost without exception regarded as pot-plants only, and treated as such; it is very seldom thought of planting them in the open ground, much less of using them largely as flower-garden plants. The scarlet and variegated sorts, we need scarcely observe, are necessary to every flower-garden; but their more beautiful fancy brethren, except one or two varieties of peculiar character, such as the old *Prince of Orange*, *Fair Helen*, &c., are but rarely indulged with a place there. It is the more remarkable that this is the case, when it is remembered how exquisitely beautiful they become, in good hands, when grown in pots under glass. It might be thought if they only succeeded proportionately well in the open ground, which they will do, that they merit a trial there, at least; and the fact is, it is the want of this trial, in the majority of cases, that prevents their admittance to the flower-ground. We are acquainted with a gardening establishment whose pleasure-ground is very celebrated for the beauty of its parterres, and the immense display of flowers which they always exhibit in the summer season, where one whole parterre is devoted to *Pelargoniums;* there the fancy varieties are placed on the same footing as the scarlet, variegated, and ivy-leaved kinds, and the effect the whole creates is such as to render the site they occupy the most attractive feature in the pleasure-ground. If then, by dealing with fancy *Pelargoniums* as with other flower-garden plants, they can be made equally useful, what might not be done with them if the same principle were carried out in preparing plants for turning into the open ground, that produce such gratifying results with those cultivated in pots? It grows exceedingly rank when planted in common flower-garden earth, branching very strongly, and bearing leaves twice their usual size; but few flowers, and those few neither of the proper size, shape, or colour. Providing soil meagre in quality and quantity in which to grow them, would greatly tend to bring about the desired result, but would be more effectual if, in conjunction with its provision, aged plants were always employed. This last precaution would of itself suffice, and better effect the object than any combination of measures. Every one is familiar with the practice of lifting scarlet *Pelargoniums* year after year from the parterre, because they are more serviceable for future use than young plants, by bearing flowers instead of growing exuberantly; and what is successful in their case, would assuredly be equally so with the fancy kinds. We commend these observations on this highly popular flower, in reference to it as a flower-garden plant, to the attention of our readers, with the assurance that if they are not aware how interesting a plant it can be rendered for that purpose, they ought to lose no time in ascertaining.

We have witnessed *Pelargoniums*, we shall observe in conclusion, constituting a strikingly beautiful feature in the pleasure-ground, when planted in ornamental and rustic stands or baskets. All the different varieties were employed, planted in an elevated basket; the means taken to induce them to flower appropriately being the same in principle as those to which we have been directing attention. The three leading kinds, conspicuous for distinctness of character, scarlet, fancy, and erect-growing, variegated varieties, as being suitable in point of habit for associating together, were planted promiscuously in the centre of the basket, the trailing, variegated, and ivy-leaved species being put in so that they might trail over and depend from its edge. Any description of stand or basket might be had to suit the taste; one we have much admired was made of the best wicker, painted green; circular in form, much the widest at top, about two feet deep, having a portable lining of tin on the inside, with a movable perforated bottom of the same material, the basket having no bottom, and resting on an ornamental frame fifteen inches high. This description of basket endures, with an occasional painting, a great number of years. Its appearance when the plants were in full bloom, was unique, not unlike a magnificent carefully-formed bouquet. Much of its beauty resulted from the care that directed its being filled with soil, &c. The drainage in the first place was made necessarily very effectual, and the soil chosen of a poor description, arranged so as to be highest in the middle; the plants were put in very thickly, so as to have as great a variety as possible, and were selected rather small, with well-ripened wood, and for their apparent disposition to flower profusely. Under the circumstances in which they were growing, they necessarily required a good deal of attention in being kept properly moist.

Baskets formed of slate or wood, would be as appropriate, though they might appear less characteristic than wicker. The situations in which such baskets are placed, requires some selection; they should not be situated where the plants would be exposed to violent winds, nor where they would appear to be crowded or encroached upon by surrounding objects.

NOTICE OF A FEW SPECIES OF ONE OR TWO GENERA IN THE NATURAL ORDER CRASSULACEÆ.

WE have a double object in view in the present paper; first, we are anxious to show the plants about to be treated of deserve such notice on their own account; and next, purpose offering a few remarks on the way to grow the generality of such plants, so as to render them interesting. Those we have directly to deal with are commonly known as *Crassulas*, though they bear the name of *Kalosanthes* in gardens. But neither is the name they have received from De Candolle, in his arrangement of the order, and adopted by other eminent botanists, and which they must henceforth be known by. To about a dozen species and some varieties, taken from the large genus *Crassula*, the above authority gives the name of *Rochea;* therefore *Crassula obliqua* or *falcata* is *Rochea falcata*, (it has in instances some time been known as such), *C. coccinea*, or *Kalosanthes coccinea*, *R. coccinea*, *C.* or *K. versicolor*, *R. versicolor*, *K. media*, *R. media*, and so on: these four species are very common, *R. coccinea* and *versicolor* more so than the others: of those in this genus we shall more particularly write. It is comparatively but the other day they used to be allowed room in our greenhouses, more as curiosities than plants of an ornamental description; they were grown in soil of the poorest nature, in small pots, and scarcely received any water six months in the year, yet they bore flowers; and this treatment, we have to remark, quite accorded with what the circumstances under which the plants growing naturally would teach. They are natives of the Cape of Good Hope, grow on rocks, derive little or none of their food from the matter they root into, or through their roots at all; but imbibe by the pores of their fleshy leaves, and subsist upon the heavy dews which fall. It is found, however, that under culture, in their case as in that of nearly all plants, that like animals, they will not only live and thrive when furnished with a certain amount of food, but will bear feeding, or rather fattening, as is proved by the *Rocheas* more particularly mentioned becoming elevated from the position before described, to that of standard exhibition plants; standard plants at first class exhibitions, too, being none other than the chief late ones of the metropolis.

There is no peculiar management required to produce plants of *Rocheas* sufficiently good as specimens for the above purpose; they are merely allowed plenty of pot room, have tolerably good soil, and are not improperly excited when making their growth; being kept in greenhouses. If any fault could be found with those plants we have seen in so remarkably fine a state, it was that they were too good, too densely bushy, and bore too many heads of flowers; such a fault is a good one, it is true, but nevertheless one that should not be permitted, because it prevents the natural habit of the plant displaying itself. There exists naturally a good deal of formality about them, their stiff branches and leaves giving them that air, but they may be trained into a free form, and not cut back so severely, to induce them to throw out many branches. *Rochea coccinea*, *versicolor*, and *media*, as will be known, do not afford much contrast of character; *coccinea* and *media* are nearest alike, the latter only having paler flowers than the former: *versicolor*, in addition to having paler flowers than either, has also a more slender habit, and differently formed leaves. The large and numerous heads of bloom of these three kinds are in good plants very fine, and vivid in colour; but are minus that distinctness from each other, and consequently that beauty, contrast in the colour of flowers renders so additionally pleasing. But other species furnish what is wanting in these in this respect, and though not so common, are, there is little doubt, among many collections of succulents. One of them is *Crassula*, or *Kalosanthes odoratissima*, but also now *Rochea odoratissima;* it is, as compared with the foregoing species, slender-growing, and bears small heads of whitish-yellow flowers, which are said to be very powerfully sweet-scented at night. *C. capitata*, or *R. odoratissima alba*, being only a variety of the latter species, has white flowers, is rather stronger-growing; and is stated to have a scent like that of the *Jonquil*. *C. jasminiflora*, or *K. jasminea*, correctly *R. Jasminea*, is a delicate, dwarf kind, with leaves that are dull crimson on their under side, and white flowers, which last a long time. These three species are not in common cultivation, but are to be met with, and would constitute with the common species associated with them, and grown in the same manner, a very interesting group of greenhouse plants. We have treated of them as pot-plants only, but know of nothing existing to prevent their succeeding in the open air; we know they grow, and have known them flower late when turned out as flower-garden plants, but in that manner they are out of character. If they could be induced to flourish and flower as rock-plants, they would be very interesting; the selection of a proper site, and suitable provision made for their roots, would be the way to ascertain whether they are adapted for growing in such a way.

Rochea falcata is really a splendid thing, and flowers very freely; we have known it succeed excellently when favoured with the warmth of a temperate stove; it also does well in the greenhouse. A point of difficulty respecting it is, that it does not branch so freely as could be desired, and would become a naked object if not pruned and kept correct in this particular. *R. albiflora* we are not acquainted with; it is said to be similar to *falcata*, but has white flowers; if it is the case, it would be a worthy companion to that species.

Echeveria, a small genus, is another in Crassulaceæ whose members increase in size under liberal management. They scarcely bear comparing with *Rocheas*, but notwithstanding are very interesting; the bright colours of their flowers, compared with the glaucous hue of the foliage, is very striking: *E. gibbiflora* is probably the best; it grows very large if allowed free scope in an open border. Before quitting this part of our subject, we may observe, *Crassula* is still a very extensive genus, numbering about eighty species, and divided into eleven sections.

We arrive now at the second point to be noticed, that of the way of rendering succulent plants in general, those principally which attain but small dimensions, more interesting than they are usually met with; to effect this, it is at once assumed they must be grown otherwise than in pots. All plants have a more or less artificial appearance when growing in pots, but it is especially true of succulents, that they are peculiarly so when thus grown. Their mechanical forms never assume a careless, at-home sort of aspect; therefore under culture it is not themselves proportionately that create interest, but the situation and manner in which they are grown. The plants abstractedly have features of interest of no mean order; a goodly collection is seldom, if ever, without some of the members which constitute it being in flower, and the inflorescence of some is really very fine: nor are there any of the members of the numerous genera but are worthy of and attract attention by the colour or peculiarity of their individual or collective blossoms. They are quite necessary to collections of any extent, to relieve, by their originality of character, the monotony that too often exists.

In growing succulents, although the index to what they require is found by regarding them in their native habitats, it does not determine that treatment apparently opposite to that which may be pointed out as most suitable is unsuited to them. They certainly are not as a whole, like some plants, especially benefited by being stimulated into vigour, if even it could be done.

The little fluid such plants require, and the small portion of soil necessary for their roots, indicates, that under culture, they would be most at home, and they to a certainty would be in the greatest extent interesting, in situations prepared in imitation of those nature provides; but the extent to which such a thing could be carried out, and the way of accomplishing it, to suit the various plants, and at the same time be subservient to circumstances, is another consideration, and one we must defer to a future opportunity.

FLORICULTURAL NOTICES.

NEW OR BEAUTIFUL PLANTS FIGURED IN THE LEADING BOTANICAL PERIODICALS FOR SEPTEMBER.

Acanthophi'ppium java'nicum. "This plant, the original species of Blume's genus *Acanthophippium,* was found by its discoverer in the woods of the higher parts of Mount Salak, in Java, where it flowers from February to April. Our drawing was made from a specimen communicated in September, 1844, by Messrs. Loddiges. It is a very pretty thing, because of the clear pale purple stripes drawn down the outside of the flowers, and the delicate lilac of the orifice. As a species it is readily known by its three-lobed lip having the centre division contracted in the middle, uneven and ovate at the point, and fleshy at the base, with thick, fleshy, irregularly-toothed sides." Synonyme, *A. javense,* noticed at page 22 of last volume.—*Bot. Reg.*, 47.

Clerode'ndron sinua'tum. "Sent in July, 1846, from the rich collection of Messrs. Lucombe, Pince, and Co., of Exeter, who received it from Sierra Leone, discovered by Mr. Whitfield. It is one of those plants to which a drawing cannot do justice, and whose charm depends on the gracefulness of the entire plant, flowering at an early period, and bearing dense many-flowered heads from the extremity of every branch; and these blossoms, too, are highly fragrant and of the tenderest and purest white. It deserves a place in every stove collection," is a low-growing shrub, with opposite, "ovate or oblong-ovate" leaves, which are "sinuated or angled at the margins."—*Bot. Mag.*, 4255.

Datu'ra corni'gera. "A very singular *Datura,*" writes Sir William Hooker, "the one here figured, has appeared in our gardens lately (the origin of which I have failed to ascertain), sometimes under the name of *Brugmansia Knightii,* and sometimes under that of *Datura frutescens;* it is unrecorded, so far as I can discover, in any book to which I have access. With the habit of *Brugmansia,* it has not the calyx of that supposed genus, which seems to have been founded upon the well-known *Datura arborea* of our gardens, which has an inflated, tubular, obtuse calyx, cut at the mouth into several segments. But this is not the *D. arborea,* Linn., and of Feuillée, Chil., t. 46 (which is the authority for Linnæus' plant), nor of Ruiz and Pavon, t. 128, where the calyx is acute and deeply cleft on one side, but appressed to the corolla, in that respect differing from our plant, of which the calyx is similarly cleft on one side, but runs out into a long subulate spreading point, The Linnæan plant is the *Floripondio* of the Spaniards, according to Father Feuillée, and Ruiz and Pavon, and is commonly cultivated both in Chili and Peru; but I possess native specimens from the Andes of El Equador, where Colonel Hall remarks, 'it flourishes on the table-lands to an elevation of 9,500 feet, and where the mean temperature is about 50 degrees.' The *Datura arborea* of our gardens, which I possess from the West Indies, where, however, it is probably only in a state of cultivation, must therefore have a new name, and I shall suggest that of *D. Gardneri* for it, in compliment to Mr. Gardner, who was not only the first (as far as I know) to distinguish it from the Western or Pacific species, but to determine its locality. In his Brazilian collection, my specimen (n. 560) of this plant bears the remark, 'Is this quite the same as the plant from the other side of the South American continent? This is a small tree, ten to twelve feet high, common on the banks of all the small rivers in the Organ Mountains. Tab. 1837.' The plant here figured thus makes a third clearly defined white-flowered shrubby *Datura.* It merely requires the protection of a cool greenhouse. In the summer it succeeds best in the open air, and bears its fine blossoms at that period."—*Bot. Mag.*, 4252.

DIASTE'MA OCHROLEU'CA. "A very pretty and ready-flowering Gesneriaceous plant, of which tubes were sent to the Royal Gardens of Kew by Mr. Purdie, from the Sierra Nivada of Santa Martha, New Grenada. It is evidently nearly allied to *Achimenes*, and apparently identical with Mr. Bentham's *Diastema* (διαστημα, intervallum, in allusion probably to the genus being intermediate between *Achimenes* and *Gesneria*), of which he remarks, 'the free stamens of this plant indicate an affinity with *Achimenes*, and the form of the corolla is not unlike that of some of the small-flowered species of that genus, but the tube is neither gibbous nor spurred at the base, and the five equal perigynous glands are more prominent even than in *Gesneria* and *Gloxinia.* It is not improbable, however, that *A. erinoides*, D.C., and *A. conifera*, D.C., may be congeners of our plant.' It flowered in August, 1846, and requires the heat of a stove." The plant is erect-growing, has opposite, hairy, ovate leaves, and bears terminal panicles of straw-coloured flowers, about the size of those of *Achimenes coccinea.*—*Bot. Mag.*, 4254.

HOLBO'LLIA LATIFO'LIA. Dr. Lindley states:—"For the opportunity of figuring this rare plant, we are indebted to L. W. Dillwyn, Esq., of Sketty Hall, near Swansea, with whom it flowered, perhaps for the first time in Europe, on a south wall, without protection, in the beginning of last March. Other plants, in the stove and conservatory, have shown no disposition to blossom. If only as a new hardy or half-hardy climber, it is a plant of interest, notwithstanding the greenness of its flowers. But it is sweet-scented. Mr. Dillwyn informs us that the female blossoms have a faint, sweet smell, such as is common in flowers of the same colour; but this smell is infinitely more powerful in the males, which, towards sunset, fill the air, in favourable weather, for several yards around, with a delicious perfume. The latter appear later than the females; there was full ten days between the first opening of the two sexes." According to Dr. Wallich, this species sometimes attains naturally a gigantic size; he writes:—"Its leaves are broad, ovate, either ternate, or quinate, about as long as the common petiole; the flowers are quite white, collected in clusters; the berries large and ovate, the seeds oblong." Synonyme, *Stauntonia latifolia.* —*Bot. Reg.*, 49.

HYDRA'NGEA JAPO'NICA, *var.* CÆRU'LEA. "For the introduction of this *Hydrangea* to European gardens, the botanic world is indebted to Dr. Siebold, who found it wild on the island of Nipon, and abundantly cultivated by the Japanese. Two varieties are distinguished by that eminent Japanese traveller; 'Benikaku,' with rose-coloured flowers, and 'Konkaku,' with blue flowers. The former state of the plant is figured by Siebold, and Dr. Lindley; our plants, the gift of Mr. Knight, of the King's Road, Chelsea, and of Mr. Henderson, of Pine-apple Nursery, Edgware Road, happen to be the blue-flowered variety, and infinitely the handsomer of the two. Whether this variety is permanent, or, as many suspect, depending upon cultivation and the nature of the soil, and therefore liable to change again, I am unable to determine. It succeeds with the same treatment as the *Hydnragea hortensis*, and will probably soon become as common as the blue-flowered kind, and as great a favourite."—*Bot. Mag.* 4253.

IONOPSI'DIUM ACAU'LE. "This charming little annual was received by the Horticultural Society from the garden of the Duc de Palmella, near Lisbon, in March, 1845. The following account of it has been published in the Journal of the Society:—'It is found wild, according to Brotero, on the basaltic hills near Lisbon, and occasionally on the limestone formation of Estremadura. Desfontaines also met with it in Barbary. A hardy plant, with small cordate leaves, and flowers which are at first white, turning to a pale lilac, growing in any rich garden soil, and blooming from April to October; requires a shady situation, and is suitable for an edging and for rockwork.'" Synonymes, *Cochlearia acaulis* and *C. pusilla. Bot. Reg.*, 51.

JAS'MINUM NUDIFLO'RUM. "Here we have another," writes Dr. Lindley "of the interesting plants introduced from China by Mr. Fortune." In the Journal of the Horticultural Society, it is stated to be "a shrub with angular deep-green trailing branches, which have little disposition to branch in the first year of their growth. The leaves are shining, deep-green, and each consists of three sessile leaflets, of an ovate form. They fall off early in the autumn, soon after which they are succeeded by large yellow scentless flowers, which grow singly from the buds formed in the axils of the leaves that have previously dropped. The limb of their corolla is about an inch in diameter, and divided into six broad, oblong, blunt, flat segments." It is expected to prove quite hardy.—*Bot. Reg.*, 48.

LESCHENA'ULTIA SPLEN'DENS. "The splendid colour of the flowers of this plant is only to be compared with that of the *Verbena melindres.* Seeds of it were sent to Messrs. Lucombe, Pince, and Co., by Mr. James Drummond, and those excellent cultivators have succeeded in rearing flowering plants in their nursery at Exeter, and of two varieties : one which we consider the type of the species, with broader segments to the corolla, and flowers in a corymb ; the other with nearly, but by no means constantly, solitary flowers, and broader segments to the corolla, which, moreover, is of a deeper, but not so bright a scarlet. In the colour of the blossoms this species approaches the well-known *L. formosa;* but that has an orange hue, and the two anterior segments of the corolla are small and acute, and the larger segments are bent back on the short tube. In the foliage, and in the general structure and size of the corolla, indeed, our plants resemble the *L. biloba*, but the bright-blue flowers of the latter, the shorter tube, and the much more hairy corolla, will distinguish it from that ; while from *L. laricina*, of Dr. Lindley, it may be recognised by the leaves, by no means closely imbricated, and by the relative length of the segments of the corolla with the tube."—*Bot. Mag.*, 4256.

LI'LIUM SANGUI'NEUM. "This is said to be a plant of Japanese origin, and if so, it is no doubt one of the discoveries of Siebold, but we find no record of it in books. It is remarkable for its dwarfness, not growing more than twelve or eighteen inches high, and for the vivid colour of its large, solitary, orange-red flower. It might be supposed to be a variety of *L. Thunbergianum*, but that plant has a tall hairy stem, bearing several flowers of a large size, with much shorter stamens, and a less brilliant colour. The divisions of the flower are, moreover, very distinctly stalked, which brings the species nearer to *L. philadelphicum*, from which it is clearly distinguished by its upper leaves not being distinctly verticillate, and by its great woolly honey-furrow."—*Bot. Reg.*, 50.

O'PHRYS CORNU'TA. "This curious little plant has long been known as an inhabitant of the Crimea, and it had been recently discovered in Dalmatia by Baron Welden, in Hungary by Nentwich, and in Macedonia by Frivaldsky. But it remained for the Dean of Manchester to give it a more Southern locality, by detecting in Corfu the specimens now figured. The markings of the lip are very singular, but variable, as will be seen from the two sorts in our plate ; and it would seem that this variation goes further, for Griesbach describes the Roumelian form with a greenish calyx, yellow spots in the middle of the lip, and blue horns." *O. bicornis* and *œstrifera* are Synonymes.—*Bot. Reg.*, 52.

TALAU'MA CANDO'LLII. "A very charming shrub, whether its foliage or its flowers, or the fragrance of the blossoms be considered. It is a native of Java, and the reforerequires the heat of the stove, where it flowers annually about the month of June. When in perfection, the flowers are a cream-colour, and more or less connivent, but they soon become tawny and more expanded." This plant grows, "as cultivated in pots, four to five feet high ; in its native country attaining a height of fifteen feet. Its leaves are alternate, from seven inches to a foot long, according to Blume, ovate-oblong, petiolate, acuminate at both extremities, entire dark green above, pale beneath."—Synonymes, *Magnolia odoratissima* and *pumila.*—*Bot. Mag.*, 4251.

NEW OR INTERESTING PLANTS RECENTLY FLOWERED IN THE PRINCIPAL METROPOLITAN NURSERIES AND GARDENS.

AGNO'STUS SINUA'TA. This handsome evergreen, as such only, up to within this month or so, it has been known to any one, will probably be familiar to many of our readers ; a good number of collections possessing it. To those who are unacquainted with the plant we may describe it as a woody, erect, rather strong-growing tree, a native of New Holland, where it was discovered by A. Cunningham, who gave it the above provision alname, and whence it is recorded to have been introduced to this country, in 1830, attaining various dimensions in our greenhouses ; in some instances it is ten feet high and upwards, with abundant foliage thickly studded on its stems. The leaves are very irregular, both in size and shape ; the majority averages six to eight inches in length, nearly oblong, tapering much though to the base ; some are regularly and equally lobed; others have odd, or a pair of lobes on one or both margins ; all are shining green above, paler beneath. The flowers are borne in panicles, sometimes leafy ones, in great abundance, shooting from the axils of the leaves, or where they have been, over the whole plant. The main stem of each panicle averages four to six inches in length, and throws out lateral and terminal branchings, a little less long, from the end of which radiate the flowers. There are a dozen on each, an inch in length, borne by a pedicle a fourth of that length ; all strike from a common centre ; are, before opening, quite horizontal, of a greenish-brown colour, apparently jointed in the middle, and have a nearly globular head. As the flowers expand, it is found they consist of a style, and what supports the anthers ; presently the latter portion begins to split in the middle, and downwards, into linear segments ; the style then commences to get at liberty, and in so doing forms an obtuse angle at the apparent joint, which turns out a joint-like bulge, situated half-way down the style, and covered with short, white down. The expansion of each flower continues by the segments becoming rent down to their base, and up to the globular head ; the latter remaining whole, is hollow, and encloses the anthers, and also the stigma, which, the style being at liberty its whole length, is detained, enclosed in the head, till the anthers burst and impregnate it with pollen, which done, the flower completes its expansion, the style strikes into and remains in an oblique direction ; the remaining part of the flower, already divided into four linear segments, springs asunder at the round head, each taking a part of the latter ; to the inside of this part is attached a burst anther. One of the segments springs upwards, above the style, and remains almost erect ; the others fall down, and spreading, remain in a descending direction. Each panicle has nearly all its blossoms opening together ; quite all become expanded before any fall. Their prevailing colour is, when open, the most vivid orange-scarlet ; the segments are pale yellow at their apex, and are of a shining black or brown colour at the base. We have thus gone into detail in noticing this plant, because it is really worthy of all the attention that can be directed to it. The singular structure of the flowers, the peculiar manner and profusion in which they are borne—all over the whole plant (at least they have been in the subject of our notice), and mingling with the foliage ; the contrast of their colour with the beautiful green of the latter renders it beyond all comparison one of the most splendid things that has for years discovered itself in our collections ; and the more interesting because a greenhouse plant. The plant we are noticing flowered in the nursery of Mr. Weeks, King's Road, Chelsea, and, what is a singular circumstance, is the fact of our having a fine plant at Chatsworth, just coming into flower. The circumstances under which both are producing flowers, we shall have occasion hereafter to refer to.

ABE`LIA RUPE'STUS. A delightful, close-growing, deciduous shrub, with rather small, vivid green, ovate, opposite leaves, bearing leafy racemes of small flowers, which have a spreading, flesh-coloured calyx, and a white funnel-shaped corolla. The flowers are very sweet-scented, and are produced an immense length of time. It at present is kept as a greenhouse plant, but is expected to prove hardy. Flowering in the garden of the Horticultural Society.

ÆSCHYNA'NTHUS RA'DICANS. A species long known to botanists, originally discovered in the forest of Sumatra, and recently introduced from that quarter by the Messrs. Veitch, who sent it to the last meeting of the Horticultural Society in Regent Street. The whole plant is covered with a dense white pubescence, has pretty strong trailing branches, and opposite, ovate, small, many larger and oblong, pale green leaves. The flowers grow in terminal and axillary clusters ; have a slender, rather small, tubular, greenish, purple-tinged calyx, and a very long, slender, tubular, dull-red corolla, whose limb-segments are small, erect, whitish, and streaked with purple at their base inside. It is a very abundant bloomer, and showy, the number and size of its flowers opposed to the pale foliage rendering it so.

OPERATIONS FOR OCTOBER.

THE unusually warm and dry weather that has prevailed up to the middle of this month, September, has been highly favourable to the interests of the culturist; whether it is regarded as having permitted the autumnal beauties of the garden to have been enjoyed without interruption, and uninterfered with, or as having been extensively beneficial to the welfare of the multitudinous objects of his care. If the future alone is taken into account, the latter consideration is the most gratifying to reflect upon. It will be advantageous to briefly devote attention to the many ways in which the fine weather has been serviceable to that with which we are more directly concerned. It has been unaccompanied by rain, and the high temperature has not been of itself sufficient to induce vegetation to commence a new growth. There are exceptions to the correctness of this general assertion, but they are of minor importance. As, then, it has not been able to effect what would be of mischievous and injurious consequence, it may have had a contrary effect, and done much to ripen and hasten into seasonable dormancy vegetation generally; this it has accomplished to a great extent, and it will be wisdom to second its acceptable service in the case of all plants and shrubs or trees of a tender nature, by proceeding to shelter them from wet and against frost, while they are in so desirable a condition. It will be a pity, of course, to carry this hint out to a rude extent, by introducing into the flower-garden or pleasure-ground any material which, compared with the beauty genial weather may still permit to exist, is of an unsightly character. Good judgment will not do this. The weather has this autumn been of the proper kind to induce late-flowering plants to bloom earlier, and shy-flowering things, some of them, perhaps, from the stove and greenhouse, but planted in the open air, to develope blossoms; the shelter of such, or their removal under glass, it may be, where practicable, should have attention.

Fine opportunity has existed of propagating by layering, and by cuttings; there should not, consequently, now remain any to be done that could have been attended to previously. Layers, as it is found they become sufficiently rooted, must be dealt with as their nature requires: those of many hardy things are frequently potted; when they are, they may be taken to their winter quarters direct, and plunged, to keep the soil about their roots uniformly moist, and also to prevent the pots being broken by frost. All late struck, and recently potted-off flower-garden plants must continue to be hardened, by getting their wood as ripe as possible. It will have been, or soon will be, necessary to arrange them in their winter quarters; it is well to have them safe in the situation they are to occupy soon enough; exposing them as heretofore, if requisite, and opportunity of doing so occurs. Cold frames, as lately recommended, we consider the most proper for their preservation; when placed in them they should be plunged up to the rim of the pots in some material that wet can readily escape from.

Greenhouse plants that may have remained in the open air up to this period, it will now probably be best to house: they might be suffered to continue there as long as injurious cold and extreme wet holds off, where any advantage is gained by their so doing, but where there cannot, and as the plants are not deriving any benefit from continuing, they should be taken in. *Orange* trees, *Camellias*, &c., whose beauty as much consists in their fine foliage as in their flowers, will be benefited by being henceforth subjected to a warmer temperature than can be expected in the open air. In other words, where they have stood out up to this time—in some places it is the practice to place such things, as objects of ornament, near the dwelling and about the pleasure-ground; we have specimen plants principally in view—they ought to be taken in, to prevent the too cold temperature starving them, rendering their foliage paler than it ought to be; in some instances we have known it to become quite of a yellow hue from this cause. These remarks apply to all plants, cultivated in pots, too tender to withstand the coldness of our climate in winter, but subjected wholly to it in summer.

Nothing is more simple than the management of general collections at this season, whether orchids, stove, or greenhouse plants. The business is to give each plant all the room it requires if possible, and all the fresh air the weather will permit exposure to; prevent on the one hand exciting influences, heat in conjunction with over-much moisture prevailing, and on the other, do not allow too cold a state of things to exist; if there does, and damp attends it, much harm will be certain to follow. Be sure these points are attended to in the Orchid-house and stove. Greenhouse and half-hardy plants, generally, are easily kept in a good state; do not give them too much water, and prevent their being injured by frost. Let every place and everything about plants, be industriously kept clean; persecute to extermination all the various insects to be met with upon and about them, or you may expect they will invade you in the spring. Cut back climbers and other plants turned out in houses as it becomes necessary, and do not allow any to create a littery appearance with their shedding leaves or flowers.

There will, at this time of the year, as always among the different collections, be some plants growing, and also will there always be some which require propagating; the requirements of both should ever be attended to in a proper manner, and at the proper time, if perfection in plant-growing is aimed at. Flowers, by whatever plants they are borne, will have attention according as they are esteemed; every care, we need hardly add, should be taken of them. Look well to the welfare of those in embryo; they are liable to meet with premature destruction from numerous causes at this season.

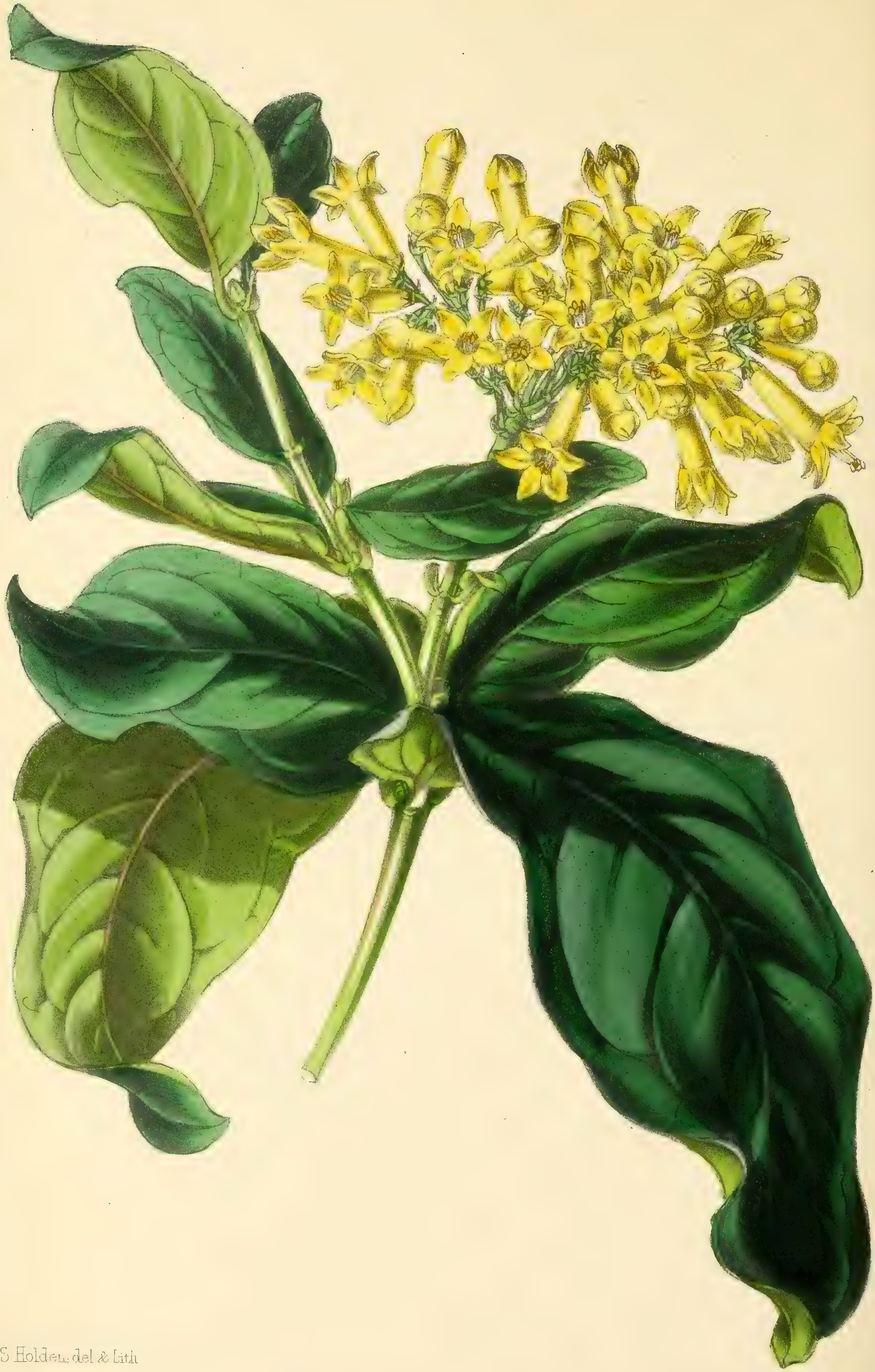
Seeds should still be looked after, harvesting them as they become fit, whether being ripened by plants in the open air, or those under glass. Sow those of biennials and perennials as soon as they are ripe, except such as are known to vegetate quickly, and these it may be well to leave for sowing in the spring, as the young seedling plants will be less liable to damp when experiencing its influence, than they are through the winter. Put in also some seeds of annuals, *Mignonette*, *Nemophila insignis*, *Collinsias*, &c., both in pots to flower through the winter and spring in doors, and in the open ground, to come early into bloom at the latter period.

Plants, to force for their flowers, must this month have their due share of attention. Pot without delay *Hyacinths*, *Narcissi*, *Crocuses*, &c.; do not give them too rich a soil, and plunge the pots in some suitable situation in the open air, where they will not be saturated by rains. Shelter them at first from wet, and give them little water; the fineness of their bloom depends upon the good state and quantity of their roots, therefore it should be the aim to induce them to root well. Do not remove them into warmth at all till they are perfect in this respect; protect from frost their foliage and bloom when it is rising. *Rhododendrons*, *Azaleas*, *Kalmias*, *Ribes sanguinea*, &c., are in a very superior state for forcing this season, having been thrown into a very fructiferous condition by the dry and hot summer we have had. The same influence has had an equally gratifying effect upon *Roses*, and all plants maintained in pots for the purpose of producing flowers in winter; therefore, the former, whether they be taken from the nursery, or are in pots, as well as the latter, have only to be well managed to be very serviceable.

Many of the numerous bulbous things which are taken out of the ground annually must now be planted; those which are for the beds of the parterre may be put in directly, or delayed some time yet, according as they are wished to flower early or late in spring.

As the interest of the flower-garden and pleasure-ground cannot now be derived from what has chiefly constituted it nearly to the present time, but is dependent upon fragments of former beauty, and the varied and varying autumn hues of vegetation, everything should wear as trim an aspect as can be given it. Ground-work, and planting of all kinds of trees, may henceforth be proceeded with as speedily as circumstances may require.

Note.—In consequence of misunderstanding our artist respecting the representation of *Æschynanthus Boschianus* in our last, the explanation given of the plate is rendered inapplicable. The figure shows the *true* character of the plant.



S Holden, del & Lith

Ægiphila grandiflora.

ÆGÍPHILA GRANDIFLORA.

(Great-flowered Ægiphila.)

Class.
TETRANDRIA.

Order.
MONOGYNIA.

Natural Order.
VERBENÀCEÆ.

Generic Character.—*Calyx* campanulate or turbinate, four-toothed. *Corolla* hypogynous, funnel or salver-shaped, having the tube much longer than the calyx, and the limb parted into four equal segments. *Stamens* four, inserted in the tube of the corolla, exserted, equal. *Ovarium* four-celled, the cells each funished with one ovule. *Style* terminal, bifid. *Berry* four or two-celled, with the seeds solitary in the cells. —*Endl.*

Specific Character.—*Plant* a robust evergreen shrub. *Branches* terete, glabrous. *Leaves* verticillate, entire, somewhat obovately-oblong, with very short petioles; base obtuse, sub-cordate; apex acute. *Flowers* yellow, produced in terminal, trichotomous corymbs. *Peduncles* bibracteate at the base. *Calyx-tube* short, pentangular, five-toothed. *Corolla* large, pubescent, with a long tube; the *limb* divided into five acute spreading lobes. *Stamens* exserted. *Berry* compressed, roundly-obovate, of a bright-blue colour. —*Hook.*

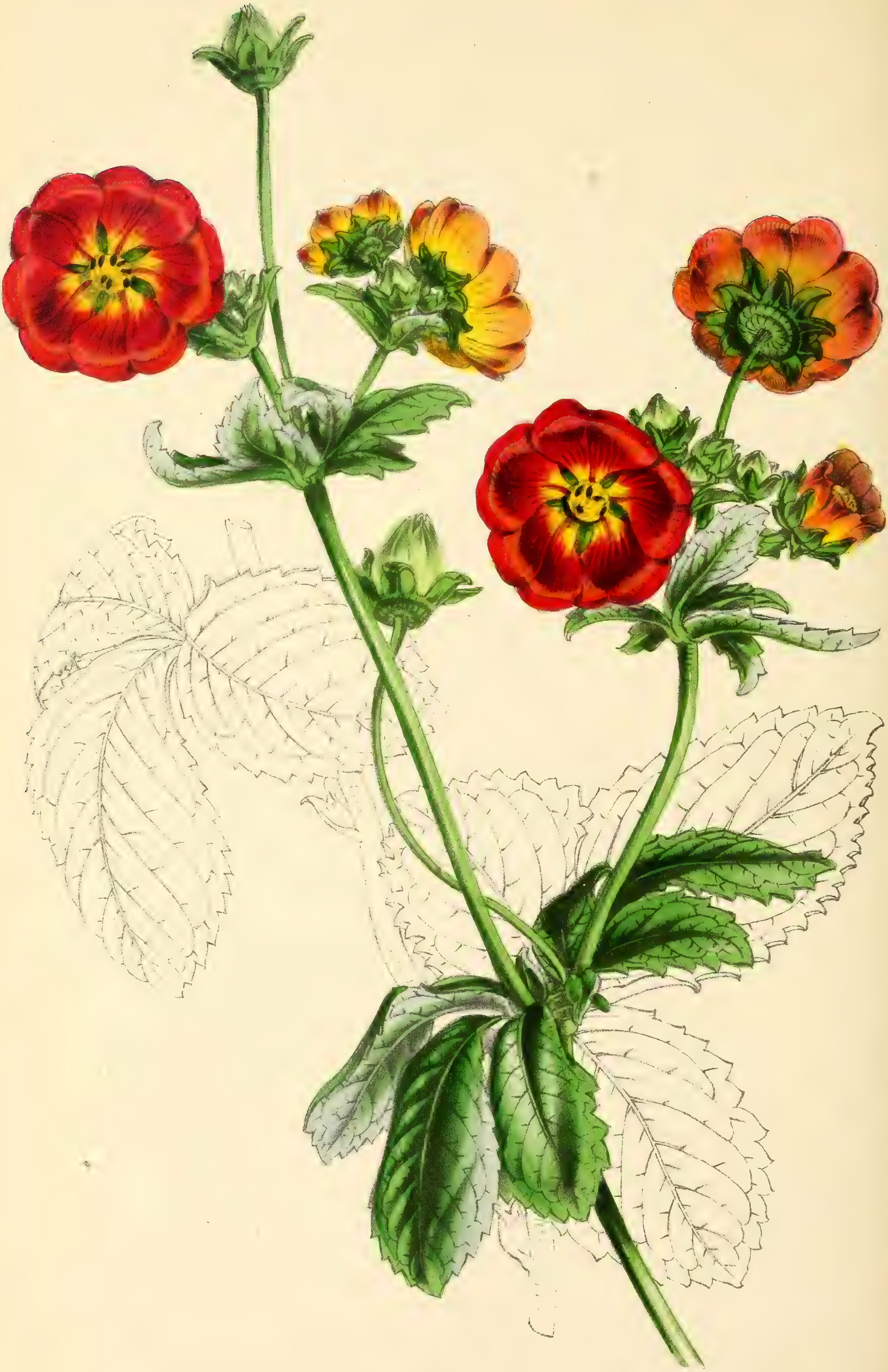
The opposite portrait is that of the whole of a plant above the surface of the soil in which it grew, kindly sent to us the beginning of this year by Mr. A. Balston, of the Poole Nursery, Dorset, and preceded by a communication from which the following, as supplying all the information we have of the native country of our subject, is extracted. Mr. B. writes, "I have forwarded you a plant in bloom, which I had from Mr. Hugh Low, of Upper Clapton, under the name of *Rondeletia*, spes., Havanna."

This is the plant, (see page 115,) published as *Ægiphila grandiflora* in the "Botanical Magazine" for May, having been received under similar circumstances to those which furnished it to us, by Sir William Hooker, whose name and specific character is above adopted. That it is a wild production of Havanna, there is no reason to doubt; for we find that the other known, rather few, members in the genus have natural habitats comparatively adjoining, as Jamaica, Trinidad, Guiana, &c. To this country it is quite of recent introduction, and seems to have come through the Continent.

Like its allies, *Æ. grandiflora* is a stove species, and one of great worth, if only from naturally producing its handsome flowers in winter; but they are borne plentifully, and endure a great length of time, and succeeding them comes another ornamental feature in the blue fruit. There are no specimens in this country which have yet attained dimensions of any account; so that the real beauty of the plant, or its true character, has scarcely been developed, though it has discovered a vigorous disposition, freedom of growth, and propagates with facility by cuttings. It has, as can be seen, large handsome leaves, and they are abundant.

The flowers of the plant figured—a mere cutting with roots—are not so large or fine in any particular, as those robust, established specimens would bear ; but they demonstrate that small plants will bloom, which is an additional recommendation, and a merit much enhancing the value of the species. The kind of soil it requires, is one of a fibrous loamy description, peat or leaf-mould being added.

Ægiphila, from *aix* a goat, and *philos* dear, alludes to the circumstance of that animal being partial to the genus.



S. Holden, del, & Lith.

Potentilla M^c Nabiana.

POTENTÍLLA McNABIÀNA.

(Mr. McNab's Cinquefoil.)

Class.	*Natural Order.*	*Order.*
ICOSANDRIA.	ROSÀCEÆ.	POLYANDRIA.

GARDEN VARIETY.

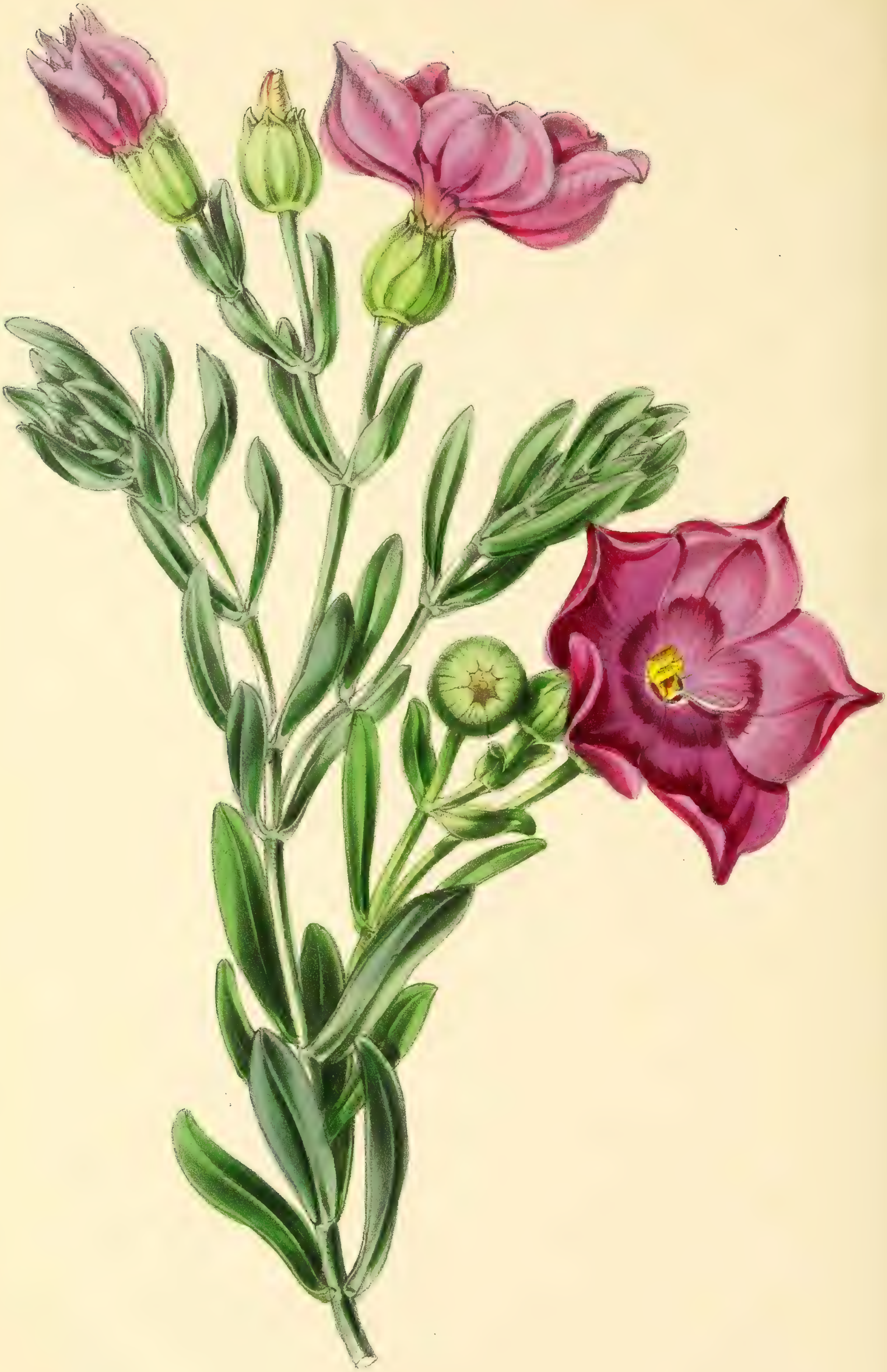
It is not possible to represent the vivid hue of the flowers of this variety; consequently, an idea of that which constitutes its chief beauty cannot be conveyed by our plate, which has been prepared from a drawing taken last summer in the nursery of Messrs. H. Low and Co.

The brilliancy of the blossoms of *P. McNabiana* is a very striking feature in its character, but is not by any means its only merit. The flowers, in addition to their brightness, are large, and are borne in great numbers, by well-established plants, on numerous strong stems, which do not attain, at the outside, a greater height than about two feet six inches; younger, less strong plants, send up stems that bear blossoms when not more than a foot high. The foliage, in the case of both the radical and caulescent leaves, is ample and profuse.

Our subject's origin, and the author of its distinguishing appellative, is given in the following extract from a note Mr. Menzies, gardener to H. Edwards, Esq., Hope House, Halifax, favoured us with in August:—"I beg to say," Mr. M. observes, "that *Potentilla McNabiana* was raised by me two years ago; it is a hybrid between *P. atrosanguinea* and *P. leucochroa;* and is named by me in compliment to my friend Mr. McNab, of the Edinburgh Botanic Gardens."

As do all the members of its numerous family, the present *Potentilla* flourishes in the common soil of the garden, and is increased by division and by seeds; but there is no certainty that plants raised by the latter agency will bear flowers like those of their parent. To a border, however circumscribed in extent, devoted to a miscellaneous collection of flowers, it is indispensable; and for rock-work, if allowed to grow and flower, as it may happen to do, it will prove suitable. When growing on a border, it should not, in the flowering season, be bundled up, tied, or supported in any way, as is too often the case with similar plants, to the sad sacrifice of all their charm, and any exhibition of character; but ought to be kept erect by as hidden means as can be employed, and so that the least restraint imaginable appears in exercise. The comparative dwarfness of *P. McNabiana* will admit it to more select situations than many other *Potentillas*.

Some of the species have supposed medical qualities; hence the generic name, by Linnæus, from *potens*, powerful.



S Holden del & Lith.

Orphium frutescens.

ÓRPHIUM FRUTÉSCENS.

(Shrubby Orphium.)

Class.
PENTANDRIA.

Order.
MONOGYNIA.

Natural Order.
GENTIANACEÆ.

GENERIC CHARACTER.—*Calyx* divided into five convex lobes. *Disk* very much annulated, situated between the calyx and the corolla. *Corolla* rotate, marcescent, with a five-cleft limb. *Stamens* five, declinate, inserted in the throat of the corolla. *Anthers* twisted, dehiscent, the fissures opening longitudinally. *Ovarium* partially two-celled, with an indefinite number of ovules inserted on the margins of the valves. *Style* distinct, deciduous, frequently incurved; the *stigma* capitate or bilobed at the apex. *Capsule* two-valved, one-celled, with very minute seeds immerged in the placentæ.

SPECIFIC CHARACTER.—*Plant* rather a dwarf shrub, evergreen. *Leaves* oblong-lanceolate, villose or pubescent, with scabrous margins.—*De Cand. Prodr.*, v. ix.

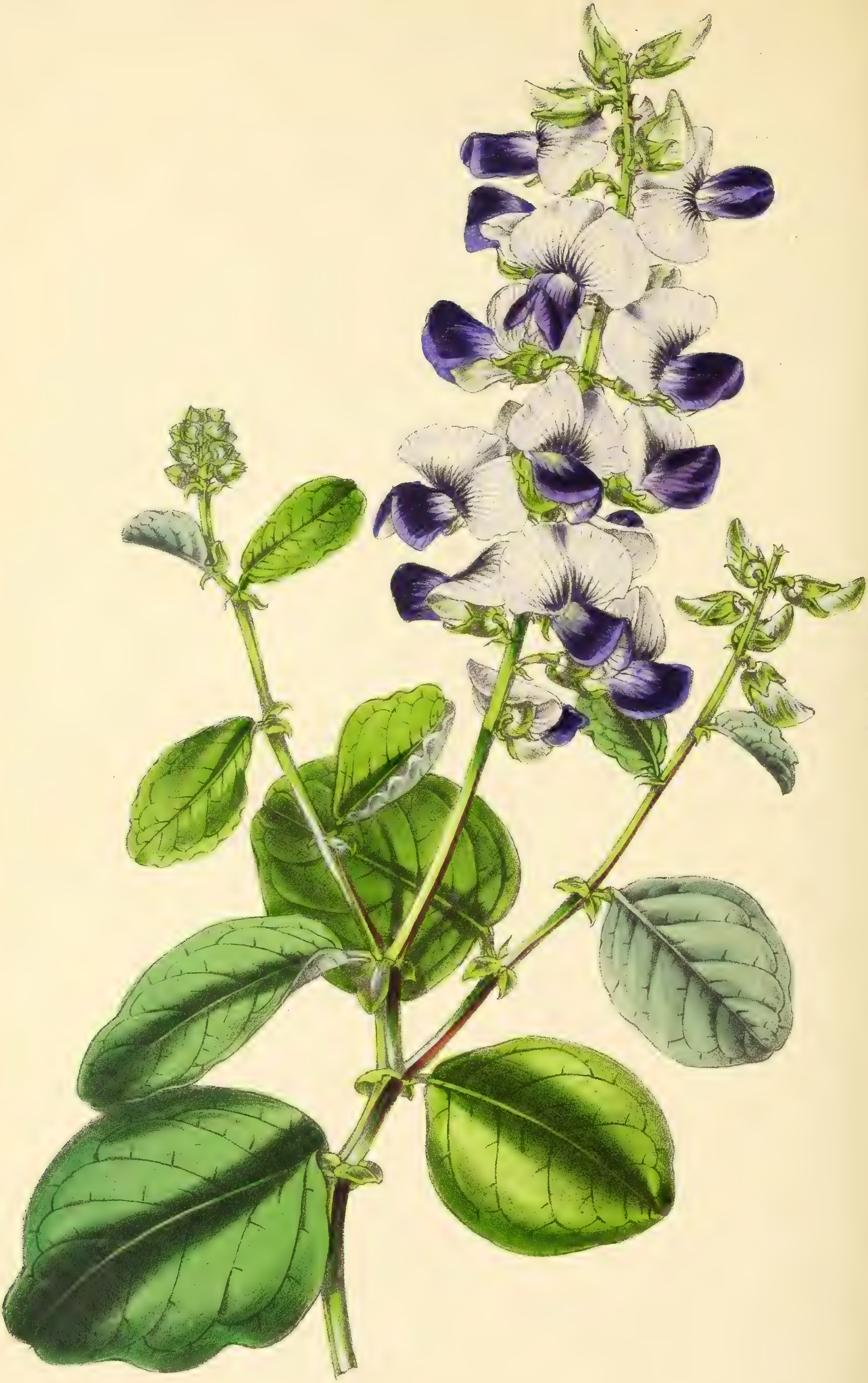
SYNONYMES.—*Chironia frutescens*, *C. decussata*, *Rosslinia frutescens*.

OUT of nearly sixty *Chironias* of numerous authors, about a dozen only are left in that genus by De Candolle, in the arrangement of it in volume ix. of his "Prodromus." *Orphium frutescens*, widely known as *Chironia decussata*, and also *Rosslinia frutescens* of some authors, is the only member, if we except two varieties of it, at present forming the genus, which was established by E. Meyer.

The interesting greenhouse plant here depicted, though invested with the charm of novelty as far as its name is concerned—the one it now bears is not much known—cannot boast of it further, 1798 being given as the period of its introduction from the Cape, of which it is a native. Under good management it grows into a close dwarf, but, if allowed, rather a large bush; its branches are short, tolerably strong, well clothed with leaves, and bear their large handsome blossoms terminally in great profusion, through the latter summer months. When not in flower it is a nice evergreen, and plants are more attractive in either state if of medium rather than a large size.

Of greenhouse plants we may remark that it is not a little surprising so few of them are planted in the open ground, in summer. There are few collections that do not, every season, furnish several specimens which, either from their too great size or old age, and consequent loss of vigour, are regarded as done with, but are year after year afforded a place out of mere respect, so to speak. Instead of treating them thus, it would be far better to turn them into the open beds or borders, or give them a shift, and plunge them in their pots. Again, there is often a superfluity in number of some species, equally as much in the way as the latter, that could not be better disposed of than as alluded to. Those of these descriptions might be restored to the greenhouse again at the proper season if necessary, or at the approach of winter given shelter to preserve them for a like purpose another year. But, it may be, none similar to the above exist; still, it were quite worth while to insure that every spring produces some, to put in appropriate situations; the effect they create when favoured with so much freedom, whether planted as individual objects or groups, justify their being provided. There are not a few species only that succeed; for every greenhouse plant, if a little regard is paid to the selection of situation, preparation of soil, &c., will luxuriate in our climate during summer.

A drawing of *Orphium frutescens* was taken from specimens obtained at Messrs. Henderson's, in July, 1844. It propagates and succeeds under treatment ordinarily bestowed upon plants of its class.



S. Holden del & lith.

Crotalaria verrucosa

CROTALÀRIA VERRUCÒSA.

(Warted Crotalaria.)

Class.
DIADELPHIA.

Order.
DECANDRIA.

Natural Order.
LEGUMINÒSÆ.

GENERIC CHARACTER.—*Calyx* five-lobed, somewhat bilabiate, upper lip bifid, lower one trifid. *Vexillum* large, cordate. *Keel* falcate, acuminated. *Filaments* all connected with the sheath, cleft in front. *Style* bearded laterally, pubescent. *Legume* turgid, with the valves ventricose, usually many-seeded, pedicellate.

SPECIFIC CHARACTER.—*Plant* an annual. *Stipules* lunate, declinate; *leaves* oval, obtuse; *branches* acutely tetragonal; *racemes* terminal; *ovaries* villous. *Corolla* with the vexillum greenish-white, streaked with pale-blue inside, and with the wings obovate, yellowish-white at the base; the rest blue, and with the keel whitish, but yellowish at the point. *Anthers* yellow.—*Don's Gard. and Botany.*

SYNONYMES.—*Crotalaria cærulea, C. angulosa, C. acuminata ?*

Crotalaria is a very numerous and widely-distributed genus; about one hundred and fifty species are recorded as belonging to it, and as inhabiting the East and West Indies, the Cape of Good Hope, Mexico, &c. The same accounts state about the half to be annuals, two-thirds stove-plants, near a fourth greenhouse, and the remainder hardy; that few are remarkable for beauty; and that the chief colours of the flowers are yellow, white, and purple, with some of intermediate tints.

The present individual is of very old acquaintance, having been introduced more than a century ago; is a native of the East Indies, and a plant of considerable interest, though not equally ornamental with the majority of those whose representatives occupy our pages. In the temperate stove, the warmth of which, or that of a close greenhouse, it requires, it forms a rather dwarf bush, flowering freely in summer. When its blossoms are developed in partial shade, they come more blue than they would otherwise do. Botanists regard it as an annual, which, doubtless, it properly is, though under culture it succeeds and propagates as a perennial, perfecting seeds tolerably free; hence, also, it can be grown as an annual.

Such plants as *Crotalaria verrucosa,* notwithstanding they may possess few beauties, or be of minor interest, should be had in proportionate numbers in collections where even really beautiful or ornamental things only are cared for; not so much for their own sake as on account of the latter, whose excellence, by contrast, they are always instrumental in setting off to greater advantage.

Our drawing was taken last spring, from a plant in the stove of J. Cook, Esq., Brooklands, Blackheath Park. Loam and sandy peat, or leaf-mould, is suitable soil for the species to grow in.

Krotalon, a castanet, in allusion to the seeds of this genus rattling in their inflated pods, when the latter are shaken, furnishes the generic name.

PECULIARITIES OF PLANTS.

UNTIL the great question of the origin of "mould" or mouldiness upon plants be settled, it will be futile to make any positive assertion upon the subject. Microscopic research has appeared to prove that every species is a vegetable organic body, of a strictly Cryptogamic structure, but so entirely distinct from that of plants, commonly so called, as almost to sanction the opinion—once generally entertained, and still formed by persons who neither read nor investigate—that *mould* is the result of rottenness and decay.

There is one general fact which may be safely adduced, before we quit the subject, it is this:—whatever may be the origin of *mould* (assuming that it is essentially a *fungus*), each and every individual species or variety has its *peculiar season of appearance* and growth; and whether it fix itself upon any living plant, or upon any effete matter as its appropriate medium of support, being deposited thereon by vivifying sporules floating in the air, or emerge from the body itself as an *educt*, in consequence of some change in the components of that body, certain it is that its appearance is arbitrary, and governed by some determinate, though unknown law.

A new publication commenced September 5th last, its title—"The Pharmaceutical Times." In its third weekly number, pp. 45-7, there is an article written by Dr. Ayres of London, expressly upon the Disease of the Potato. As a whole it is excellent; but there is one passage so relevant to the parasitic diseases of plants, that we venture to offer a considerable portion of it* to the consideration of those cultivators who are curious in Cryptogamic Botany.

In viewing the question whether parasitic fungi are to be considered as a *cause* or a concomitant of disease, Dr. Ayres considers it essential to inquire into the habits and growth of the fungi; and he says—"For our present purpose we may divide these forms of vegetables into two classes; those which infest living plants, and those which inhabit dead animal or vegetable matter. It is well known that the greater part of the fungi live or grow on the earth, particularly where it has been well manured by the decay of large quantities of organic matter, or stumps of trees, or stems or other parts of dead plants; but there are tribes, which like the entozoa" (*εντος within*, and *ζωα living beings*) "among animals, infest the living plant, or some particular organ of the plant. The smut of corn and other plants, may be mentioned as an example. Their epiphytic fungi do not necessarily destroy the plant unless in excessive abundance, although in all cases they render it less vigorous; or merely some part is destroyed as in the smut of wheat (*Urédo segetum*) where the ovary is filled with the sporules of the uredo instead of the grain. There are other fungi which make their appearance on parts of the leaves which have become unhealthy, have lost their ordinary green, and turned brown or yellow, showing a diminution of vitality of that portion of the leaf. The genus *Botrytis* belongs essentially to the division in which the plants are developed on dead animal or vegetable matter, on the putrid stems of herbaceous plants, for example. But one or two other species fix themselves on the half-dead spots of leaves and stems. The Botrytis parasitica, very abundant on Shepherd's Purse, (*Capsula bursa pastoris,*) occurs chiefly on parts already infected by the Uredo candida, or late in the autumn, when the vegetative force is on the decline. Another species, Botrytis effusa, grows on spinach, and is said to prove very destructive, and on Chenopodium albidum; the appearance of the fungi is preceded by a yellow or brownish spot on the leaf, and the cellular tissue is nearly deprived of vitality before the fungus makes its appearance. We have then two sorts of fungi; those which answer to the entozoa, which produce little inconvenience of the general functions of the plant, if not very numerous; and those which inhabit the dead or dying portions of cellular tissue.

"The *mucorini*, to which tribe the Botrytis belongs, is emphatically the inhabitant of putridity, and it is only in a few rare cases that species of this tribe are found in living plants, and even then the parts they infect have either partially or wholly lost their vitality."

Without further referring to the Botrytis or other fungous parasite, which had been seen upon some (not all) the leaves of infected potatoes, it is sufficient to say that Dr. Ayres is opposed to the idea, that to it is to be traced the *origin* of the malady. In fact, the conclusion appears inevitable, since the practical gardener must be familiar with numberless examples of fungi, fixing them upon flowers, and fruits, and leaves in the garden and in the flower-houses, whenever a puncture, an abrasion, a wound of any sort, provided it is followed by disease, or a decay of the surface or tissue. Analogy is therefore by no means wanting; and we much question whether there be one well-attested evidence of any plant becoming a prey to a mould, mildew, or other manifest fungus, until it be previously debilitated.

To dismiss the subject of mould and mildew, it suffices to observe that to the amateur, the gentleman, or indeed any one who may possess but one or two flower-houses, it becomes a consideration of moment whether mere beauty of flower and foliage, can ever be deemed a compensation for constitutional liability to such sources of deformity? A plant, for instance, so lovely as *Thunbergia* in most of its species and varieties,—though never perhaps infested with fungus,—is proverbially subject to acarus (plant spider): for this reason it has been dismissed from some noble collections, and we now rarely see it. Two remarks apply to this subject. The first, we are aware, will be disputed by many who believe that a plant like *Thunbergia* will introduce its pest, and contaminate a whole house. Still we suggest that, with few exceptions, each plant has its peculiar insect; a plant covered with acarus may stand almost close to a vine, without imparting one to its neighbour, which itself, in point of fact, is, under certain conditions, peculiarly liable to a black variety of acarus.

Again, *Thunbergia*, if kept in that vigour of growth which it can attain, is rarely infested. The soil that appears to suit the plant completely is the black bog-earth of a true peat or turbary (not heath-mould), mellowed by long exposure and turning to the atmosphere. Still, though prevention and remedial operations may be successful, we again urge the propriety to reject any plant, from small collections, which may be justly considered susceptible of disease or attack.

The common green-fly (aphis) is an exception, because the remedy by fumigation is comparatively facile, and its application, as respects the carbonaceous matter dispersed throughout the house, is rather beneficial than otherwise.

Enough has been said of an infliction which fortunately does not frequently fall upon the plants under glass; but let it alight where it will, whether on living subjects or on others deprived of life in the ordinary acceptation of the word, the bulk and analogy of facts seem to prove that every parasitic fungus is an *educt* from vegetable tissue, diseased, or brought at least into an altered condition, either by accident or by the operation of natural agents at a particular season. The decline of the year, when vegetable vitality is at the ebb, is the period when such fungi usually abound.

We now are arrived at that part of our proposed object which will be most directly useful to the greater number of our practical readers. Plants, in common with animals, are very liable to diseases. Bad treatment, incompatible soil, and other circumstances not consistent with their natural habit, may and do bring on an unhealthy condition; one which by the undue application of water, for instance, is frequently indicated by a sickly yellow tinge of the leaves; but independent of erroneous treatment, the natural health becomes affected, the colour fades, growth, if it do not wholly cease, is weak and spindly, and the plant perishes.

As causes are not revealed, it were vain to allude to remedies; it is then of moment to inquire what are those plants which are found upon general experience to be rarely susceptible of disease, or of injury from insects or mildew; for it is certain that a select collection of healthy subjects is much preferable to one of larger extent wherein malady and foulness are but too likely to occur.

It is impossible to offer an opinion upon new and rare plants, which now are introduced by hundreds yearly; but a notion of general habits may be pretty correctly formed by observation of certain types.

The whole tribe of *Geraniums* is in the early spring of some years exposed to the attack of an *aphis;* this was proved to a perplexing extent, we believe in 1840, after a mild and wet winter. If neglected, the insects will run throughout a whole house with a degree of surprising rapidity; but they may be destroyed by the fumigation already alluded to; therefore the retention of this beautiful tribe must be indispensable; no greenhouse collection being complete without it. As however the *Gerania* approach to the nature of *succulents*, they rarely admit of intermixture with the hard-wooded, hair-rooted tribes.

Such are the greater number of those very beautiful plants which rank among the "Heaths" (*Ericeæ*), and the "Epacris" (*Epacrideæ*) families. Fortunately, though requiring peculiar and refined treatment, they are little affected by malady or insect; therefore may always be introduced with confidence; but, as before said, they ought not to be intermixed with succulents like the *Gerania*, *Calceolariæ*, and other free-rooters, which demand constant attention to repotting with rich decomposable matters; for whatever persons who are ignorant of physiological structure and chemical principles may think or say, there is shrewd reason to conjecture that the gases from the soil and those ejected from the leaves of such rank growers, exert a mischievous influence upon the foliage of all other plants of a habit totally dissimilar.

As to succulents proper—Aloes, Cacti, Stapelia, Mesembryanthemums, &c., &c.—they transpire but little, and therefore produce but a trifling influence upon the atmosphere of a house; yet, though not commonly remarked, many of the species are greedily devoured by snails and slugs. Even the *Epiphyllum speciosissimum*, with its tremendous armature of spines, becomes an easy prey to the snail, by which it is pierced and bored full of holes, with impunity to the molluscous vermin.

In the stove, or warmer flower-house, there are several tribes, of great beauty, which are apt to suffer from the scale turtle or coccus, and mealy insects. Such are the Orange and Lemon, plants which, if once touched, become covered with scale: the poisonous, but most lovely Nerium, in all its varieties, and the Cape Jasmine (*Gardenia*), are also in the like predicament. It is not easy to dislodge the enemy completely, yet a brush with a lather of soft soap and plenty of soft water will keep it in check, but the case admits of no neglect. The mealy scale is still more insidious and injurious, and washing with innoxious fluid is the only safe remedy. Every one should avoid chemical solutions, particularly those of the metallic salts. Some are absolutely poisonous; and thus it has been proved that stems of the Orange, and other firm-wooded shrubs absorb fluids; for a very little arsenic has killed a plant in the course of a few hours.

All the plants of the Gesnera family are worthy of every care; they are rarely injured or infected; though aphis has occasionally been observed. By watching the development of roots from leaves, parts of leaves, or cuttings, particularly those of *Gloxinia*, a great deal of structural knowledge may be obtained: all the *Achimenes*, also, are charming and safe plants. The good old *Hibiscus rosa sinensis*, in all its varieties, single and double, has never been rivalled; but the approach of aphis upon the young shoots must be jealously watched, otherwise, hundreds of tender leaves will fall, and then not one healthy shoot can be procured.

Æschynanthus.—The plants of this genus are of easy culture, and beautiful in foliage and flower: they approach, but do not belong to the *epiphytes* or parasites; the *Hoyas* also are extremely fragrant and of singular structure: we know of no disease to which they are liable. Enough has been said to warn and encourage—but the subject could be extended to a hundred pages.

CONIFERS AND TAXADS.

The above Anglicised terms are adopted from Dr. Lindley's recent work, "The Vegetable Kingdom;" they are that author's English expressions for his Natural Orders, *Pinaceæ* and *Taxaceæ*, which include the better known one, *Coniferæ.* The trees and shrubs comprising this Order have gradually risen into favour, and now occupy a very elevated position in the esteem of those who concern themselves about plants and trees, about having features of interest in their pleasure grounds, and the beauties of the landscape. Every planting season of late years has brought increased proof that this is the case; hence, if only on these grounds, there is sufficient reason why we should occupy some space with a notice of the family, and furnish useful information respecting its management. There are other inducements to do so: the noble character of some of the tribe, the interest attaching to others on account of what we learn respecting the dimensions they attain to and position they occupy naturally; the great usefulness of many; and, what chiefly brings them within our province, the greater or less ornamental character of almost every species; in some the most beautiful slenderness of form and grace of habit prevailing; a greater number are distinguished for compactness and regularity of growth; others again have features of grandeur entirely original; their colours, too, as if nothing should be wanting to complete the catalogue of interesting qualities they possess, are comparatively rich in contrast; the silvery green, and variegation of white and green, opposing itself to the darkest and most gloomy shades of that colour, is an accumulated amount of peculiarly interesting features which no other class of vegetable productions, whose beauty does not consist in their floral organs, can lay claim to the possession of, and sufficient to entitle its possessors, as they severally are suitable, not only to adorn our flower-gardens and grounds, but to conduct us as avenues to mansions, to occupy appropriate positions in our parks, and form our woods. Thus much we have written by way of introduction to our subject, and to convey to those little acquainted with *Conifers*, &c., what their properties, as far as our object is concerned, are.

Hitherto little has appeared in this work having reference to the subjects of this essay; at page 62 of vol. vii., is an article ("General Treatment of the Genus *Pinus*,") consisting principally of instructions for raising *Pines* from seed, a few remarks on the soil and situation they affect, of the most appropriate situations to plant them in, &c., in short, all was then said that was necessary at the period, when species were raised annually by dozens or scores, that now yearly appear in thousands and ten thousands in Nurseries. An evil complained of in the paper already mentioned, was one arising out of the practice of inducing seeds of *Conifers* to germinate and spring up, by subjecting them to a high temperature, which not only produced a tenderness and delicacy of disposition in plants so raised, but also caused numbers to damp off; like results are attendant upon similar practices still; and there are other evils flowing from the same source, whose ill effects might be enlarged upon, were it not for the fact that as far as culturists generally are concerned, it is a matter of little importance, they having nothing to do with plants at this stage of their existence; the nurseryman is the party whose interests are affected by the prevalence of such mischief; and besides, evils of this kind suggest both their prevention and cure: the latter is accomplished, where it may have been necessary to employ warmth to start the seeds,—and gentle heat can be advantageously resorted to, if it is judiciously applied, though upon the whole its aid is best dispensed with,—by hardening the young plants off as gradually and quickly as possible; and the former by simply allowing seeds time to vegetate without any stimulating process being practised. What was formerly, and is now, stated respecting the rearing of *Pinuses* from seed is equally applicable to similarly producing plants of each species in the order.

The preceding observations are a suitable introduction to those required on another point in managing *Conifers*, &c., generally, but more particularly the larger growing kinds. Plants, we have had occasion to notice already, in a universal view of the case, are in the hands of Nurserymen through the younger stages of their growth; the period they remain there is not regulated by any fixed rules; longer time is required to produce saleable plants of some species than of others: all the while, however, they do continue, owing to circumstances most will understand the nature of, they unavoidably can only be allowed just sufficient root-room to enable them to make bare progress. This necessarily is the case with all nursery plants kept in pots, and the effect of such a course of treatment upon each individual is productive of and recognisable by the same features. The ill consequences it is the forerunner of, unless counteractive measures be taken, are of no small magnitude, and would be greater, did not the same agency which tends to their production also originate a state of things whose advantages greatly qualify the measures by which they are brought about. We may briefly glance at what these are: in the case of plants similar to those of which we write, (Pinuses, &c.,) which are tender or imagined to be so, no better method could be taken to give their organisation a solidity, and their character a hardiness, the most fitted to test their capability of withstanding cold, than the process we spoke of as being carried on by the practice prevailing in nurseries. Among flowering plants, too, it is the agent that induces a fructiferous disposition, causing perhaps many things to flower at an age and size that renders them doubly interesting, and which would not otherwise bloom for years. To return to the way in which *Conifers*, &c. are injuriously affected by being kept long in small pots, we proceed to remark, it arises from the majority of the Order having long, string-like roots, that have but a very slight disposition to branch and throw out rootlets and fibres, and that, consequently, when confined in a small compartment, as a small pot, in elongating creep round and round its inside, forming a series of complicated coils, which stretch round the ball of earth; these joints extract nutritious matter from as it were so many tightened wires, which cannot unaided become slack or alter their position, whether the plant which bears them is repeatedly shifted into larger pots or tubs, or planted in the open ground. This circumstance respecting the roots of the plants of this family may seem of little moment, but in reality it is not so. From such a simple cause alone we have known strong, many years old plants of the Chilian Pine, (*Araucaria imbricata*), though planted out under the most favourable circumstances of soil, &c., remain almost quite inactive for years; and when they had at length formed sufficient new roots to enable them to start, they did not do so till all their lower branches had become so stunted that no further development of consequence was made by them; therefore had the destruction of the real symmetry and beauty of the future specimen been accomplished. Its effects usually show themselves in this way, but there are also other results; a remarkable instance of which is, the case of several Pinasters, (*Pinus Pinaster*) rooted up by violent wind, notwithstanding they were growing together in a sufficiently large mass to protect each other, and were further sheltered by full-grown forest trees closely adjoining.

The specimens had attained as great dimensions as fifteen feet in height, and nearly as much in diameter; they had grown rapidly, being in excellent loam, and had abundance of roots, the main ones of which still remained in the shape they had been forced into at the time of their formation, in pots of a few inches in diameter, and therefore had little hold of the soil; hence the destruction of the trees. It may be that any one pretending to have a knowledge of gardening matters would not have committed the roots of plants to the soil which were in so fettered a condition as those must have been which the above-mentioned plants bore when they were planted; at least, they ought not, by any means, to have done so; but it not unfrequently happens that other than strictly professional people interest themselves in such things; therefore ought points like these to have attention directed to them in proportion as their observance is of importance or otherwise, leaving wholly out of view any knowledge of who is to profit by their elucidation. The course which ought to be pursued in planting *Conifers*, &c., when any of these root-bound plants are met with, is simply the complete disentanglement and thorough spreading properly out of every root, however difficult a task it may be. It is most easily and effectually accomplished by washing all the soil away from the whole mass of roots, thereby leaving them clear and traceable without difficulty in the complicated confusion they too often get into. In finally fixing the plant in the position it is to occupy, if its dimensions are such as to require it, a stake should be provided and it fastened permanently thereto, the roots afterwards being arranged and carefully covered with soil. A plant thus treated, whether it be introduced to a pot again or to the open ground, may require a good deal of water the first season after planting, may want shading from powerful sun, possibly would lose some of its foliage, and make little progress the first year or two, but let it once get established, and it enters on a new career of existence, and eventually, in a highly satisfactory manner, proves that the additional trouble taken with it has by no means been thrown away.

On the kind of soil most suitable for *Conifers*, &c., it may be well briefly to remark, that no very particular selection is necessary; pure loam is that which they most delight in, and naturally, we know, they succeed to a considerable extent in peat. It is not, however, the soil they actually root into, so much as the subsoil or under-strata, that conduces to their welfare; if that within a foot or eighteen inches of the surface is chalk, limestone, or any other rock, it matters not how low or how elevated the situation, there *Conifers*, &c. will be most at home and flourish in a remarkably luxuriant manner. A small plantation of common Spruce and Scotch Firs (*Abies excelsa* and *Pinus sylvestris*), in which those trees display a luxuriance rarely met with, occurs to our recollection, and which we will give a short account of, as an illustration of the correctness of what we advance upon this head.

The site of the plantation is a position apparently the very reverse of appropriate for *Conifers*, being low, but an examination of its soil discovers that appearances are no criterion in this instance; it is found to be eighteen inches or so in depth, a poor brown loam resting on a limestone rock, fragments of whose substance constitute a third of the material the trees are rooting into; they were planted at the usual distance asunder, and afterwards, as they grew, repeatedly thinned out; but notwithstanding, by the time they had attained an altitude of from fifteen to twenty feet, had extended nearly as much in diameter at their base, and formed a close thicket by the individual trees commingling their branches with those of each other. A relation of facts like these have a direct bearing upon our subject by showing what kind of situation, as far as their welfare is dependent upon their roots, *Conifers*, &c. admirably succeed in. It should be understood, we are not very solicitous about the welfare of a *Spruce* or *Scotch Fir*, but would have our readers learn that the conditions of soil and situation under which either luxuriates are equally favourable to a similar attainment by the most beautiful species in this valuable Order. We are well aware naturally provided situations, appropriate in the requisite particular, are very seldom met with in pleasure-grounds or within their precincts, but that does not render a knowledge that such situations are most suitable less valuable, but rather on the contrary enhances its worth, for, possessing it, we are enabled to set about producing the state of things we require. A locality in which moisture is stagnant, either in the soil or atmosphere, is very unsuited to the growth of *Conifers*, &c.; the soil, however, chiefly, should be free of this element in excess, and if it is not the case naturally with any in which it is desired to have them, it must be rendered so. The *proper* way of planting, that is, elevating the individual planted by placing it on a mound of earth, considerably raised above the surrounding surface, much enhances the certainty that injurious influences do not arise, having wet for their origin. Planting in this way too is of further importance. But first to complete what we have to say of planting: it may be thought that raising a mound of soil eighteen inches to two feet high, and of proportionate extent in circumference, would be inadmissible on a level lawn, or in other conspicuous points of view; it is not however the case, in consequence of the habit of *Conifers*, &c., rendering it necessary, which would be conspicuously evident as the specimen progressed towards the dimensions it finally may reach, and made increased development of its natural character. Of the formation and afterward dealing with this mound there is something to be said. The site whereon it is raised should be broken up, principally for the benefit of the plant, which, finally planted and secured, everything should be left as smooth as possible; and where the operation has been performed on the lawn, the raised part should be turved over, leaving a circular space uncovered about the stem of the specimen, varying in extent according to its size. In the course of time the mound will become less, and eventually seem to be small in proportion to the tree, which should be corrected by a greater space being broken up, and more soil added laterally; it will then finally appear to be growing on a gently-rising naturally-formed eminence.

Of the planting of individuals or groups of *Conifers*, &c., so that they appear in place and characteristically associated, we have yet to treat. Next to any plant being healthy and flourishing, this is the most important point connected with it, and with no one or many species is it of more consequence than with those which compose the orders of which we write. It is not unusual for persons when they receive a new or valuable plant, to plant or place it in some favourite spot, regardless of however little or much it may be appropriate for the situation, or the situation for it: this has been greatly too much the case with *Conifers*, &c.; we know of numerous instances where all harmony has been destroyed, and true taste done violence to, by want of attention in this respect. The species in these orders we have seen are very much varied in habit; some grow continually so neat that if their size did not interfere they would scarcely seem out of character on the chimney-piece of a dining-room! There are others as much of an opposite habitude as to convey the idea that they could only be at home in the most romantic forest. A knowledge of this, then, it is which should guide the judgment of whoever decides the point of situation, in introducing a *Conifer*, &c., to their garden. Those of the first class, the neat and elegant habited species of which the Upright Juniper (*Juniperus excelsa*) among small things, and the Chilian Pine of large species, are examples—complete, delightful objects in themselves—may be admitted to central positions, or uniformly placed in the most highly kept select parterre, or any other choice part of the grounds, and in gardens generally, wherever a space in some measure sufficient to enable them to appear to advantage can be allowed. Quite reverse is it with those of an opposite character, as the Ponderous, and Mr. Sabine's Pine (*Pinus ponderosa* and *P. Sabiniana*); they also are truly fine, but lack that completeness as individuals others possess in so remarkable a degree. Their features of interest and beauty requires contrasting with other species to make it appear evident and understood; therefore it follows that the class we are considering should be planted in groups, or have large tracts devoted to them, if they are to be judiciously disposed. The selection of sites for such groups and tracts requires, too, a greater exercise of judgment than may be imagined; for if these open, straggling, or romantic habited kinds cannot, from their style of character, be admitted to polished, circumscribed, or seemingly confined residences, as individuals, the same reason must exclude them from such, or anything approaching such, as collections and families; and it must strike any one that, were this principle strictly carried out, it would be equivalent to excluding a great proportion of the species in these Orders altogether from our gardens. This, of course, is fully admitted and acknowledged by explaining that the object in view is to fix attention on correct principles, by ascending to view them from the highest point of vision, thereby preparing ourselves the more correctly and gracefully to descend and proceed in carrying out true principles in degree, at least, and to the extent circumstances will permit.

In reducing the principles in question to practice, we should do so by avoiding as positions for *Conifers*, &c., whether single specimens or as collections of the kinds we are dealing with, any situation with an air of confinement or restraint about it; also putting them in contact with any object that creates the idea that it might interfere with their ultimate development and prevent them extending favourably into view. Of course it would be a pity that a partiality for *Conifers*, &c., should not be indulged where such objections as these only exist, to prevent their being had. Indeed they do not interfere with pleasure derivable from possession alone, though they do if real satisfaction from growing them also is the object in view. In planting a collection of *Conifers*, &c., a knowledge of the dimensions they reach in a state of nature, should in some measure be the criterion of what space to allow each kind; if not as much can be spared as is sufficient for every specimen when it arrives at maturity, all possible to allow should be given, for there are very few of the larger species in the Orders that will bear removal after they have attained any considerable dimensions. Placing valuable species, or others, where they are permanently to remain, are included more particularly under the latter directions, and especially those whose full development of character is any concern. Many kinds are liable to great injury from being exposed to strong winds, which have a very disastrous effect, by compelling the development of specimens to take irregular and uncouth directions, and indeed quite preventing them from growing as they are naturally inclined.

The proper general planting-season of any *Conifers*, &c., is, without question, through the autumn; and those plants that require treating as has been directed, in consequence of the confinement of their roots, should have it done and be planted at that season; as also should only then be moved any rather large specimens. Plants growing in pots and that can be turned out without their roots requiring molestation, may be planted at any time, but would be benefited by being so treated in the autumn. Further remarks on this highly interesting family are postponed till a future Number.

FLORICULTURAL NOTICES.

NEW OR BEAUTIFUL PLANTS FIGURED IN THE LEADING BOTANICAL PERIODICALS FOR OCTOBER.

ADE'NIUM HOU'NGHEL. A curious plant from Aden, presented by the Court of Directors of the East India Company to the Horticultural Society, in whose garden it flowered last June. "It forms one or two fleshy stems, like those of a *Plumieria*, on the top of a club-footed protuberance, and these stems divide sparingly into a few dumpy branches, each bearing two or three leaves only. Its rate of growth is so slow that half a century is not too great an age to assign to such an individual as that now represented. Its appearance is the more singular, because from its leafless, stunted branches there appear many very handsome rose-coloured flowers, bordered with crimson, and fully two inches long."—*Bot. Reg.*, 54.

ÆSCHYNA'NTHUS LOBBIA'NUS. "Splendid as is the present species of *Æschynanthus*," remarks Sir W. Hooker, "this figure will soon be followed by that of an allied one, *Æ. pulcher*, not less beautiful, and both imported by Mr. Veitch, of the Nursery, Exeter, through the medium of his collector, Mr. Thomas [William] Lobb, from Java. They are there probably Epiphytes, therein resembling many Orchideous plants; and seem to be amongst the most brilliant of the vegetation of that fertile country. Like the Orchideous Epiphytes, too, they seem to be by no means difficult of cultivation in a moist stove, and they are assuredly very free flowerers. Of all the species with which we are acquainted, however, and there are not a few which we possess in our herbaria, the two now alluded to are certainly the most striking, the present especially so, from the strong contrast between the purplish-black calyx and the brilliant hue of the corolla." [A desirable plant, flowering very freely, and an immense length of time. Noticed at page 165, as an unnamed species.]—*Bot. Mag.*, 4261.

BRASSAVO'LA DIGBYA'NA. "This very singular plant was introduced from Honduras by Mrs. M'Donald, and by that lady given to Edward St. Vincent Digby, Esq., with whom it flowered last July, at Minterne, in Dorsetshire. Its huge, yellowish-white flowers are as sweet as those of *Aerides odoratum;* and the largest measure nearly three inches in diameter. The neck of the ovary, which is cuniculate in a remarkable degree, is full four inches long. We have not seen the pollen-masses of the plant, but it is so much like *Br. glauca* in habit, that we entertain little doubt of their belonging to the same genus. There are, however, some peculiarities in the structure of this plant, which must not be lost sight of. Its anther-bed has no fringes or other process at the edge, but is deeply sunk and guarded behind by a long subulate tooth, which curves over the anther, and the stigma has three linear foveæ, which all open into one compressed stigmatic passage."—*Bot. Reg.* 53.

CYPRIPE'DIUM IRAPEA'NUM. Dr. Lindley observes:—"The annexed figure, taken from a plant belonging to M. Hugo Finck, in the temporary possession of the Horticultural Society, does scanty justice to this noble species. It is indeed a faithful representation of what appeared at the Society's garden; but we have now before us a specimen collected in Mexico, near the town of Irapeo, which has two flowers more than twice the size open at the same time, and two more ready to expand. It looks like a gigantic form of the downy yellow *Lady's Slipper* (*C. pubescens*) of the United States."—*Bot. Reg.*, 58.

CLE'MATIS SMILACIFO'LIA. "A fine but very little known species of *Traveller's Joy* with large scandent stems, handsome undivided leaves, marked with from five to seven nerves, much resembling those of some *Smilax;* large paniculated racemes of diœcious or monœcious flowers, having singularly revolute sepals, dark rusty brown and downy without, almost black and glabrous within. Four allied species with these characters have been described by Blume and Wallich, but which, judging from the diagnoses of the authors, as well as by herbarium specimens, might reasonably be united into one, the original *smilacifolia* of Dr. Wallich, from Nepal. Of the identity of our plant, introduced from Java to the stoves of this country (where it flowers in June and July)," Sir W. J. Hooker says, "I have satisfied myself by comparison with authentic specimens. The *Clematis*, n. 1006 of Zollinger's Java Plants, seems quite to agree with the *Cl.*

glandulosa of Blume, but I can in no way distinguish it from *Cl. smilacifolia.* The *Cl. smilacina* of Blume is probably a misprint for *smilacifolia,* and intended to be considered the plant of Wallich. And lastly, of the *Clematis subpeltata* of Dr. Wallich, from Tavoy, that distinguished author observes that it differs from *Cl. smilacifolia* only 'in its having subpeltate, broad cordate leaves, in the panicles being shorter, the sepals ovate.' "—*Bot. Mag.,* 4259.

CALYCOTO'ME SPINO'SA. "A pretty shrub, capable of withstanding the ordinary winters in the open border, but injured by severe ones. It grows freely in any dry, loamy soil, and flowers in June ;" has small leaves, and bears its rather large, yellow flowers in great profusion. "It occurs in a wild state in various parts of the South of Europe and Barbary, on stony or rocky hills." Synonymes, *Cytisus spinosus, Genista spinosa, Spartium spinosum.*—*Bot. Reg.,* 55.

CY'CLAMEN LITTORA'LE. "Roots of this plant, collected, we believe, at the Lake of Como, were presented by Mr. Bentham to the Horticultural Society, in whose garden one or two have survived and flowered. It is mentioned as a variety of *C. Europæum,* by Mr. Gordon, in his paper on *Cyclamens,* published in the *Gardeners' Chronicle* (1843, p. 660), in which all the known garden species are mentioned. It is as hardy as any of the sorts, and thrives in sandy loam and leaf mould, but can only be multiplied by seeds. In some respects it approaches *C. coum,* especially in its perfectly undivided leaves and short flowers ; but although the latter are short, they are very much longer than in *C. coum,* and the leaves are spotted and differently shaped."—*Bot. Reg.,* 56.

FUGO'SIA HAKEÆFO'LIA. "A lovely hibiscoid plant," Sir William Hooker writes, "flowering at an early period of growth, bearing copious large blossoms of a rich lilac-purple, with a deep red-purple eye surrounding the long staminal column, and these flowers, contrary to what is usual in the *Hibiscus* family, remaining many days expanded. This most desirable shrub was introduced by Messrs. Lucombe and Pince, being raised by them from Swan River seeds, in the spring of 1846. In the summer the plants flowered profusely. An allied species (if it be really distinct) is the *Hibiscus lilacinus* of Lindl., *Bot. Reg.,* t. 2009, from the same region of Australia ; but the leaves of the latter are broader, and the corolla is destitute of the deep purple eye which gives such a brightness to the blossoms of the present species. Strangely enough, Walpers retains *H. hakeæfolius* in *Hibiscus,* and refers *H. lilacinus* to *Lagunaria* of Don, whereas a very slight inspection will show that both are naturally placed in the genus *Fugosia,* of which the character is given at tab. 4218 of the present volume." An erect, tall, not much branching, glabrous shrub, with distant, very variable (bipinnatifid and trifid) leaves, whose segments are linear. Flowers axillary, borne in August.—*Bot. Mag.,* 4260.

GOMPHOLO'BIUM VENU'STUM. "A lovely greenhouse plant, from South-west Australia, first detected by Mr. Brown. Mr. Frazer gathered it in King George's Sound, and Mr. Drummond sends specimens and seeds from the Swan River settlement. From the latter, Messrs. Lucombe and Pince have raised plants, which produced their copious corymbs of rich purple flowers in July, 1845. In the dried state the leaflets have a singularly rugose and almost beaded appearance, from the shrinking of the parenchyme between the transverse veins." A rather dwarf, erect-growing, slender-branched shrub, with remote, alternate, pinnate leaves, whose pinnæ are linear. —*Bot. Mag.,* 4258.

NY'MPHÆA DENTA'TA. "From the rich collection of Messrs. Lucombe and Pince, Exeter. The roots were brought from Sierra Leone by Mr. Whitfield, and produced their handsome flowers in the aquarium of the stove in August 1846. Aquatic plants are, generally speaking, widely dispersed, and not a little variable, so that it behoves us to adopt new species among them with great caution. There can be no doubt that the plant here figured is nearly allied to the celebrated *Nymphæa Lotus,* an inhabitant of the Nile, figured in Andrews' 'Botanist's Repository,' tab. 391, and to *N. thermalis,* D. C., a native of Hungary, represented in Sims' 'Botanical Magazine,' t. 797, (under the name of *N. Lotus*) ; but if those delineations be accurate, the present is surely a different species, as well as an inhabitant of a widely different country ; or, if the same, then are the plates most inaccurate, for neither in the base of their calyx, nor on the under side of the leaf is there any similarity. Our plant seems to be unquestionably the *N. dentata* of Schumacher and Thonning, above quoted, which is a native of still waters on the coast of Guinea ; and we have therefore so called it. The singularly prominent and glabrous venation on the under side of the leaf, (similar to that of *Euryale ferox,* and of the *Victoria regia*), the large flowers, and the calyx striped green and white, together with the white base of the calyx, and the peculiar contraction there, are characteristic of the present species." The petals are numerous, white, and the "stamens and stigmas yellow."—*Bot. Mag.*, 4257.

Plero'ma e'legans. "A plant of great beauty, with copious, glossy, strongly-nerved foliage, and flowers of a large size, and a peculiarly splendid colour, to the rich velvety purple of whose hue no pencil can do justice. It is a native of the Organ Mountains, growing at an elevation of 4500 feet, where it was first detected by Mr. Gardner (n. 405 of his collection), and subsequently by Mr. W. Lobb, who sent it to Mr. Veitch. In that gentleman's nursery, at Exeter, it bore its splendid blossoms in June, 1846."—*Bot. Mag.*, 4262.

Pilu'mna la'xa. "This new and very distinct genus of *Orchids* has been hitherto known only from the account given of it in the miscellaneous matter of this work for 1844, at No. 74, where, speaking of the present species, it is remarked that its general appearance may be understood by its having been mistaken for a *Trichopilia.* Its flowers are produced in loose, erect racemes, out of broad, obtuse, short membranous spotted bracts. The stalks and ovary are an inch-and-a-half long; the latter with three very stout and strong ribs. The sepals and petals are a pale watery green, erect, linear-lanceolate, equal, faintly tinged with purple. The lip is cream-colour, rolled round the column at the base, to which it is also united at the lower end. The column has a singular fringed hood, overlying the anther, and a nearly vertical stigma closed in by fleshy inflected cheeks. In these circumstances it differs from *Aspasia,* to which the genus is nearly akin." Discovered in the woods of Popayan, by Mr. Hartweg, and flowered in the garden of the Horticultural Society, in the autumn of 1845.—*Bot. Reg.*, 57.

NEW OR INTERESTING PLANTS RECENTLY FLOWERED IN THE PRINCIPAL METROPOLITAN NURSERIES AND GARDENS.

Achime'nes formo'sa. A charming plant, in all respects similar to *A. coccinea* and *rosea,* except in the colour of its flowers, which are much deeper and more vivid in their prevailing hue than those of the latter, and have at their throat small, rich, brownish markings. It has flowered with the Messrs. Rollisson, and has, we believe, been received by them from the Continent.

Fu'chsia serratifo'lia. The majority of those who have grown this *Fuchsia* have found it is not so free to flower as other species and varieties, and such defect has been regarded as dispositional; it is not, however, the case, which was proved by specimens exhibited at the Regent Street Rooms of the Horticultural Society. In the course of the season, both large and small have been sent, loaded with flowers; the latter so late as the beginning of October. The shyness in question is attributable to the course of culture applied to it having been of too stimulating a nature.

Gesne'ra corda'ta. A very strong-growing species, wholly very woolly; has large, opposite, cordate, bluntly-serrated leaves, and bears its flowers in a terminal, leafy panicle of great size. The flowers are the shape of those of *G. Cooperi* and allied species, and a very pale, clear, scarlet colour. It has flowered in a stove at the Exotic Nursery, and is a fine thing.

Griffi'nia interme'dia. This stove plant differs from its near ally, *G. hyacinthina,* in being altogether more slender, having narrower leaves and longer flowers, but fewer of them in the umbel; the segments of the corolla are more narrow, and their colours much paler, though they are arranged in a similar manner. It has flowered in the Tooting Nursery.

Hoy'a campanula'ta. This is a somewhat slender-branched climber, differing much from its congeners in having larger flowers and not at all fleshy leaves; the latter are rather distant, opposite, ovate-acuminate, and dark green. The flowers grow from the axils of the leaves, on slender peduncles, in considerable quantities, have a corolla more than half an inch in diameter, bell-shaped, shining, wax-like, greenish-yellow, or cream coloured. The specimen under notice, sent from Exeter by Messrs. Veitch, to the October meeting of the Horticultural Society in Regent Street, was not large, and did not evidence a free flowering disposition; but that is not much criterion of what the species, which has been recently introduced by Messrs. Veitch, may do when it has been longer under the influence of cultivation. It is an interesting plant.

Lie'bigia specio'sa. As *Tromsdorffia speciosa,* this plant was sent, in September, to the Regent Street Rooms of the Horticultural Society, by Messrs. Veitch. De Candolle gives it the name of

Liebigia. It is a native of Java, and has been recently received from thence by the above gentlemen; is an erect-growing, hairy, soft-wooded stove plant, with large, opposite, ovate-acuminate leaves, producing flowers at almost every axil of the latter. The flowers come in great abundance, are borne on short pedicels growing in twos and threes and upwards, from the end of a rather longer peduncle, and have a widely tubular, approaching funnel-shaped, corolla, with a spreading white limb, sulphur-coloured throat, and light purple tube. Two varieties were present; one a cut specimen, with darker-tubed flowers than the other. It is a striking thing, in consequence of the discrepancy between the size of the flowers and leaves, and the opposite colours residing in each flower.

LANTA′NA MU‵TABILIS. Very few may be aware how excellent a flower-garden plant this is; therefore we here take an opportunity of directing attention to it as such. It is usually cultivated in the stove, and growing in its border, or in pots, it is a very pretty lively-looking thing, but not at all comparable with what it becomes when planted in the open ground; there, in peat earth or the ordinary soil of the parterre, it grows from a foot to eighteen inches high, and laterally as much as could be desired; gets very close and bushy, and produces its heads of flowers in immense profusion; the latter, from the varying colours each exhibits, creates, especially when the sun is shining upon them, a more charming effect than can be imagined—quite equal to, and more interesting than, any other plant with inflorescence of similar colours. To the flower-garden, then, either as a mass in the parterre, or as a border plant, *L. mutabilis* is indispensable; we were not aware that such is the case till a recent visit to an establishment in the neighbourhood of London convinced us. *Lantana Sellowiana,* too often standing about gardens as if it had no suitable station, has long been familiar to us as equal to any Verbena in point of hardiness, habit, and production of bloom (except that it does not throw up such large trusses), for the purpose in question, and no doubt other species will do equally well in the open ground. In trying any there it should be remembered they ought not to be translated direct from the stove, and that a little preparation of soil will be greatly in their favour. *L. Sellowiana* is beautifully adapted for trailing over rockwork, and, in common with similar plants, has this valuable property – that it continues, when growing out of doors, to increase in beauty up to the period of its destruction by frost, instead of ceasing to display it, as do many perennials at the close of summer weather.

PASSIFLO‵RA LEMICHE′ZII. Bearing this name, a very handsome *Passiflora* has bloomed in a stove at Messrs. Rollissons'. It may be said to be a very superior edition of *P. Kermesina,* as it has leaves like those of that species in shape, but thrice their size and not of the same hue underneath, and flowers wholly larger, whose petals are similar, though deeper in colour than *P. Kermesina's.* The ray approaches that of *P. fragrans.* Its habit is vigorous, and it is a free bloomer.

RAPHISTE′MMA PULCHE′LLA. In one of their stoves, the Messrs. Knight and Perry have flowered this fine climber. It is a fit associate for the well-known beautiful *Stephanotis floribunda,* from whose flowers those of this plant do not materially differ in colour, size, or shape; they are, however, larger, and each segment of the limb of the corolla has a pink mark down its centre. The flowers are borne in rather large racemes from the axils of the leaves, are not very numerous on each raceme, but the racemes come in abundance. It is a smooth, rather slender-growing plant, with opposite cordate taper-pointed leaves; bears generally the above name, but *Pergularia campanulata* is another it is known by.

OPERATIONS FOR NOVEMBER.

THE amount of rain which had fallen in October, previous to this calendar being written, was sufficient to characterise the month as one rather remarkable for wet, and, what is of more consequence, sufficient to partially interfere with the operations of the season. If such a state of things should have continued to prevail, proceedings whose further advance much affects the removal or working of soil, will be well yet postponed, where postponement may already have been practised, if it can be done. In instances where it is purposed to accomplish numerous improvements, and in works of magnitude, it cannot; but even in those cases nothing will be gained, but much mischief may be wrought, by disturbing to a great extent heavy adhesive earths, and especially planting in them. With such exceptions as these, as far as general planting is concerned, nothing can have been more propitious or favourable than the weather has proved, to the welfare of shrubs and trees removed, if not to the actual operation of removal, particularly to large specimens. No opportunity of prosecuting transportation of the latter, or indeed planting of any description, nor, setting aside what hindrances may have arisen from causes such as above alluded to, should delay be at all discoverable, in pursuing any ground work. A reperusal of former papers, and calendral remarks relating to planting, may be advantageous at this season.

Late rains will have been instrumental in directing attention to ill-formed walks, choked water-courses, badly or undrained ground ; it may be the shrubbery, the lawn, and possibly the parterre ; or the site of the mansion, or other dwelling ; that of glass-erections, and perhaps the locality in which some valuable shrub or tree is growing. Silent teaching, in some instances amounting to reproof, of this kind should not by any means pass unheeded. The value of good walks in our gardens is never better appreciated than at this invariably damp period of the year, for it often happens they are much resorted to, the weather usually continuing sufficiently mild to permit exercise in the open air to be extensively indulged in, and the well-arranged grounds still furnish much to interest and delight. Foremost of the latter is evergreen and variegated vegetation, the now ripening wild fruits, as that of *Thorns, Hollies, Privet,* the *Strawberry-tree,* &c. Of flowers, too, we may yet boast some which are furnished by our borders and shrubberies ; witness the last-mentioned shrub, the *Laurustinus* and *Chrysanthemum.* The existence of these, to invite inspection, is one of many reasons why the flower-garden and grounds should be kept in the best order practicable, by all leaves being continually gathered up, herbaceous plants cut down, climbers trimmed, and a general clearance of all rubbish effected, lawns and walks kept swept, and the latter rolled.

Where circumstances demand it, climbers may be properly pruned and permanently secured for another year, care being taken that the material used in the latter operation is not of a kind to appear conspicuous, as thick ties of bast ; and in the case of shoots being fastened to a wall, "shreds" of various and glaring colours should be avoided. Shrubs, too, may be pruned, if necessary, and borders much exposed to view forked over, and made to look tidy. The straggling shoots of climbing and other *Roses* may be shortened, or finally pruned ; but it must be borne in mind, in doing so, that the operation affects the display of bloom in regard to the time it is produced ; early pruning causing earlier bloom, &c.

That which is to form the winter and spring furniture of the parterre should henceforth be put in its place. Refer to preceding pages and volumes for what to employ for this purpose. Such things as are intended to be protected from frost must not be forgotten, but thought of by at least preparing protective material, and having it at hand.

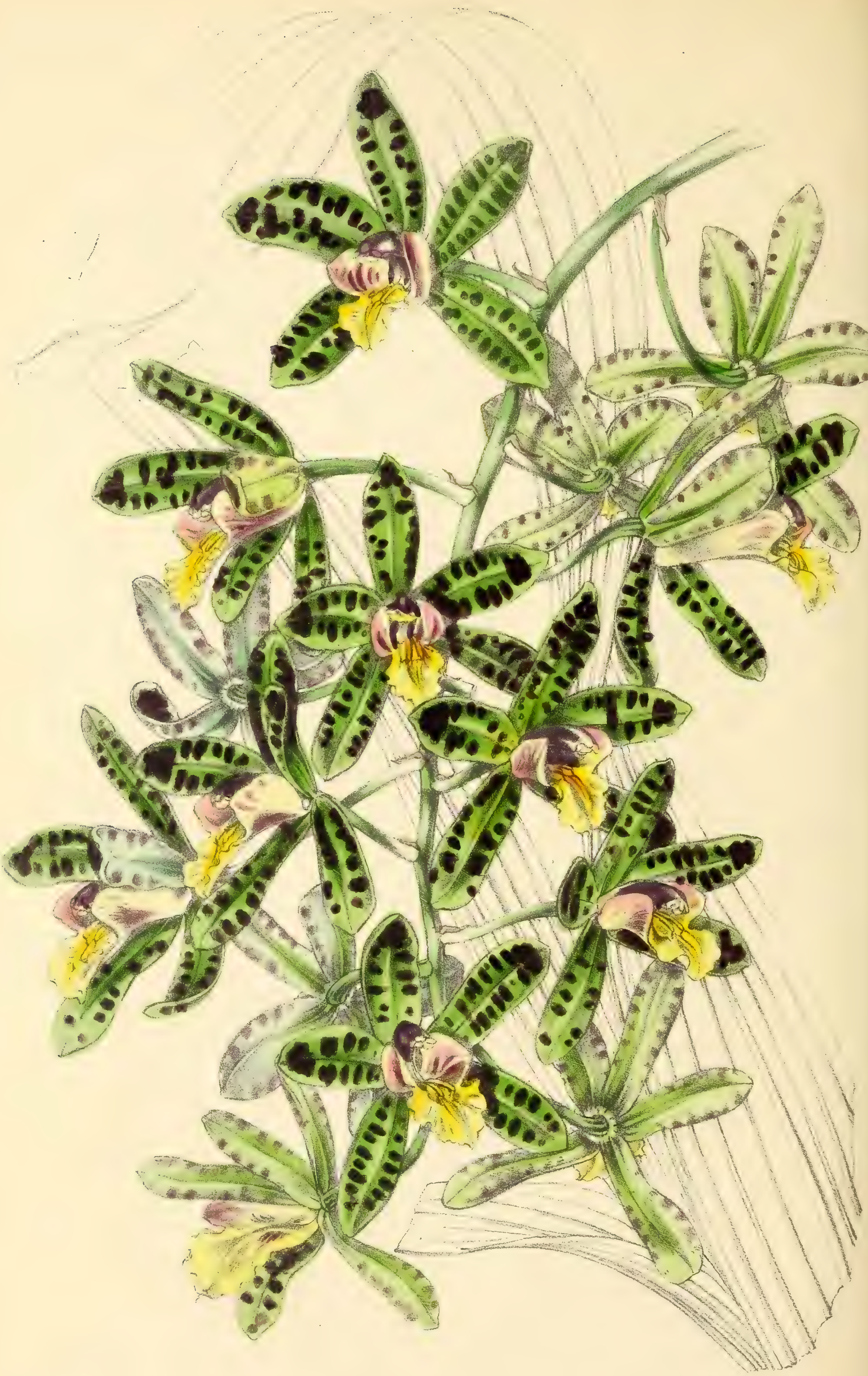
Tulips should be got in with all speed, the end of the month finding none unplanted. *Hyacinths* also, and in short most bulbs, whether intended to flower in pots or the open ground, will be materially injured if not forthwith planted. *Auriculas, Carnations, Pinks,* and such things, require to be kept quite clean, sheltered from excessive wet, but not by any means excited, and therefore fully exposed to all air.

In plant-dwellings little active work is found to do ; no more water should be used in any than is positively ncccsssay. The existence of a too wet order of things may be dispelled by gentle fires through the day, the house being thrown open. Admit air on all favourable occasions to each department; look well to growing plants at this season; young vegetation is most apt to damp off. *Orchideæ* are chiefly in a quiescent condition, and in consequence require little water. The effects of cold and damp among this family now, is too often painfully evident hereafter, therefore regard it in this particular; on the other hand be cautious in the use of fire-heat, and do not be afraid to admit air every suitable opportunity. A thorough occasional syringing of the collection on a favourable day—a warm, light, airy one—to dry up superabundant moisture as quickly as possible, is productive of beneficial and gratifying results. The inflorescence of *Orchids* especially requires a dry, rather warm atmosphere now, after expansion, that is, if its prolongation is desired. *Camellias* are overwhelmingly loaded with flower-buds this year: frequent thinning will consequently have to be exercised; those being brought early into flower, must be very gently dealt with—submitting them to a mild and very steady temperature. A further cutting in of climbing and other plants turned out in conservatories and other erections, or an effectual pruning, may now be practised: allusion is more particularly made to those which have flowered or occupy an undue extent of space. Flower-garden plants can scarcely now be maintained in too dry a condition, if enough water is given to preserve their wood plump, particularly those in cold pits; regularly shorten growing shoots to prevent the formation of elongated growths, and lose no opportunity of propagating any of which you may not have a sufficient stock. *Hydrangeas* and *Fuchsias* may be stowed away in any cool dry place, as also *Pelargoniums* and other things brought in from the flower-garden; they will keep dormant and well, although in comparative darkness, if no more water than is necessary to preserve life is given.

Such flowers as those of some *Oxalises, Cyclamens, Chrysanthemums, Chinese Primulas,* the double purple, and double white and single varieties, also many *Ericas,* will become charming this month. Exercise your best talent in disposing so as to make the most of them. Those of the *Erica* family flowering now are often imperceptibly, though fatally, injured by being placed within reach of heat from flues or other heating apparatus. Do not let Heaths suffer by having too much water supplied to them; if they do, the loss of their foliage, if nothing worse, is inevitable.

The introduction of *Roses, Lilacs,* tree *Pœonies, Lily of the Valley,* and many other things too numerous to mention, to the forcing apartment, should take place regularly, at intervals and in quantities sufficient to supply the required demand. Do not, by any means, think of hurrying them into flower: indeed they will not be hurried; keep up suitable humidity, and the plants entirely free from insects. The least appearance of the latter anywhere among plants should be a sufficient remembrancer of how they ought to be disposed of. *Neapolitan* and other *Violets* should have attention; being kept clean and free from red spider, and plenty of air given, unless it is wished to push them into flower.

As soon as *Dahlias* become injured by frost to any extent, if it is not already done, cut their tops off, and take them up forthwith.



S. Holden. del. & Lith

Ansellia Africana

ANSÉLLIA AFRICÀNA.

(African Ansellia.)

Class.
GYNANDRIA.

Order.
MONANDRIA.

Natural Order.
ORCHIDÀCEÆ.

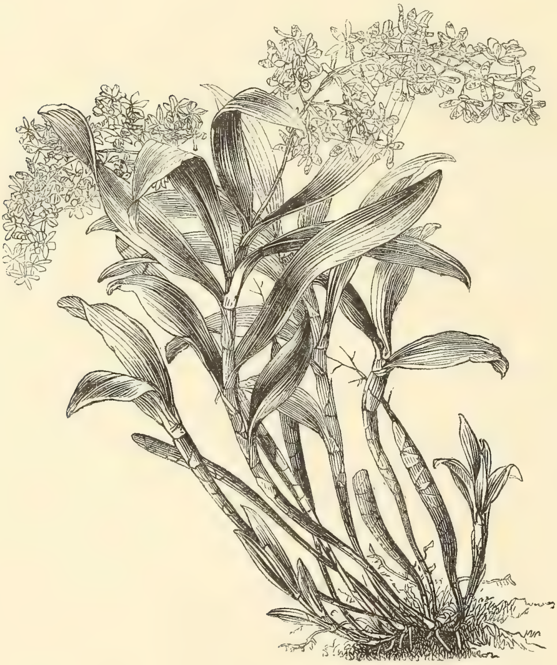
GENERIC CHARACTER.—*Sepals* oblong, fleshy, equally spread and free. *Petals* of a regular conformation, and amply spread out. *Labellum* sessile, very flat and broad, bilamellate, trilobed; the middle lobe smaller and warty. *Column* elongate, marginate, auriculate on both sides of the base. *Anthers* bilocular. *Pollen-masses* four, sessile, and contiguous to the base; the two dorsal ones much smaller. *Glands* narrow, acuminate on both sides.

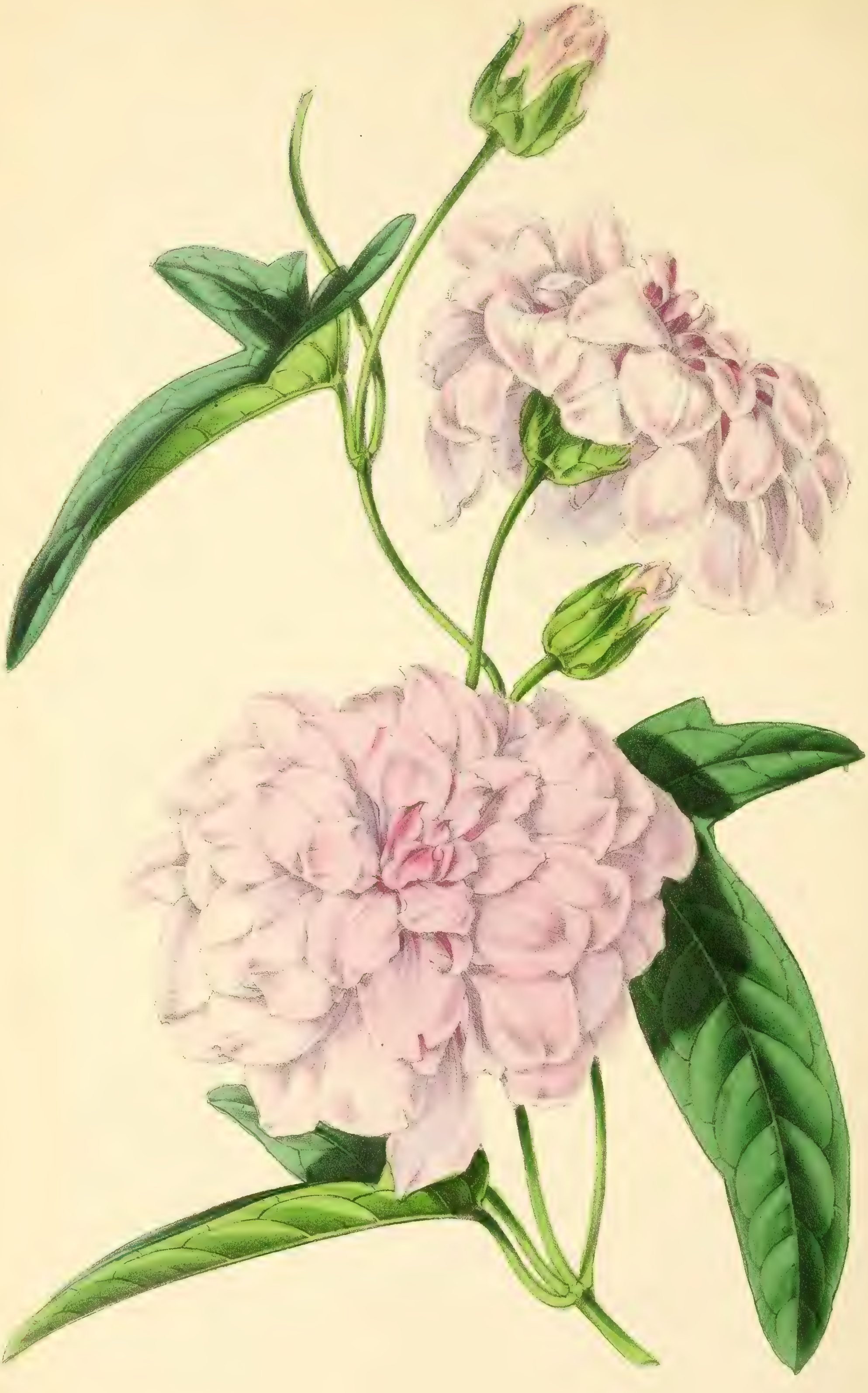
SPECIFIC CHARACTER.—*Plant* an epiphyte. *Stems* elongate, terete, leafy at the apex. *Leaves* plaited, coriaceous. *Panicle* terminal.—*Bot. Reg.*

THE worth of this beautiful Orchid was known to botanists some years previously to its flowering in this country, which it did in different collections early last spring, when our drawing was made from a specimen developing blossoms under the care of Messrs. Loddiges. With them it succeeds admirably in the ordinary Orchid-house, and grows in pots filled with decayed sphagnum moss, to a large bush, consisting of many robust stems well provided with healthy foliage. The large panicle of flowers, of which a part only is shown in the coloured representation, springs from near the apex of the stem which bears it; but these features, as well as the style of growth and habit of the plant, are shown by the cut on the next page.

Mr. Ansell, a gardener, who went from this country with an expedition that ascended the River Niger, in Africa, originally discovered *Ansellia Africana* in the Island of Fernando Po; and doubtless his doing so was the means of directing attention to its value, and ensuring it an introduction to Britain. But independently of this, if we are correctly informed, the plant has long had a place as an unnamed member of some collections; indeed it had so previously to its being found by Mr. Ansell, after whom the genus has been named by Dr. Lindley. In the *Botanical Register* for this year, Dr. L. says of this plant that "It is indeed a noble thing; for although its flowers have somewhat the colour and appearance of a large *Cymbid*, yet their panicled disposition, and the entirely different habit of the plant, render it much more showy than any *Cymbid* known to us. Its nearest affinity is perhaps with *Bromheadia*, with which it corresponds in having a lengthened stem and terminal inflorescence; and thus it may serve as a connecting link between the Brassid form of Indian and African Orchids, and as a transition to the Indian Sarcanthids by way of *Eulophia* or *Galeandra*. It is very near *Cymbidium* in technical characters, though so extremely different in its manner of growth. The auricle at the base of the column, the four pollen-masses, and the very narrow gland fining away to each side sufficiently distinguish it."

Fibrous peat, with ample provision, by charcoal, &c. for drainage, and otherwise agreeable treatment, cannot fail to be productive of great luxuriance in this plant; which attained, there should be no difficulty in causing it to blossom liberally.





Holden del & Lith.

Calystegia pubescens

CALYSTÈGIA PUBÉSCENS.

(Downy Bindweed.)

Class.
PENTANDRIA.

Order.
MONOGYNIA.

Natural Order.
CONVOLVULÀCEÆ.

Generic Character.—*Calyx* five-parted, inclosed within two foliaceous bracteas. *Corolla* campanulate, five-plicate. *Style* one; stigma two-lobed; lobes terete or globose. *Ovarium* two-celled; cells two-ovulate. *Capsule* one-celled from the shortness of the dissepiment.—*Don's Gard. and Botany.*

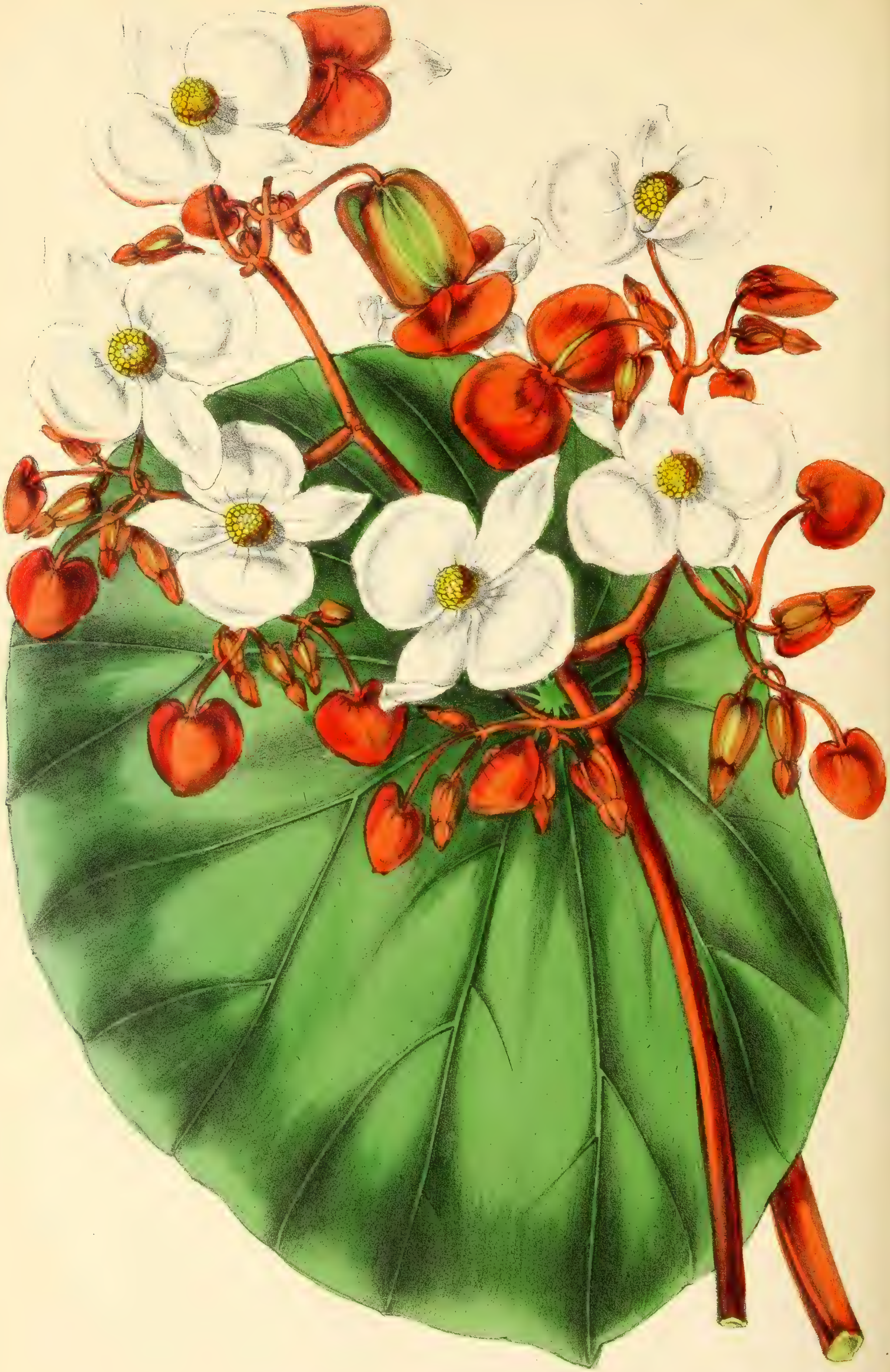
Specific Character.—*Plant* perennial. *Stems* herbaceous, twining, pubescent. *Leaves* oblong, hastate, rather pubescent, acute, with angular lobes at the base. *Peduncles* unifloral, with numerous angulosities. *Bracts* ovate, ciliate, with reflexed margins.—*Lindley.*

Our gardens are indebted to those of China for this plant, it having come from them to the Horticultural Society in the summer of 1844. Since then the Society has distributed it, and many collections possess the species. Messrs. Whitley and Osborne, Fulham, grew the specimen from which the representation here given, taken in July, was obtained.

Few plants are capable of originating more pleasurable emotions than climbers and twiners, when the latter are even but comparatively enabled and allowed to exhibit their inherent loveliness. The way in which nearly all grow, and rest upon and clothe almost everything within reach, the uncommonly interesting beauty of the flowers of many kinds, and the prodigality of their inflorescence, great qualities though they be, are but every-day ones with the plants in question. *C. pubescens* is a twiner whose claims to regard subsist more on newness and singularity, than other features; but it is also interesting and useful, as far as the last quality consists, in the ease with which it flourishes and the freedom of its blooming. Great success distinguishes the progress of our plant when favoured with tolerable soil and the shelter of a greenhouse, whether it be in a pot or planted out. Under the latter circumstances in the open air, planted against a conservative wall, or any object upon or over which it can ramble, in a favourable situation, it would be still more at home. Propagation is accomplished by dividing the roots, and also by cuttings.

There is a peculiar advantage in growing climbing and twining plants in the open air, and one that is too often lost sight of; it is that of being able so to place them, that as they grow, they have liberty to assume something of the appearance, and partially create the effect they do in a wild state. Much may be done by assisting them in this respect; as, by the avoidance of too artificial a method of support. In most cases the direction and securing of the leading shoots is all that is required. Sometimes a tender climbing or twining plant may be put to raise itself by clinging to another, some robust brother growing against a wall, &c. A little provision made to ensure that the weaker individual progressed, but also that it kept within due limits, would be the only trifling outlay of exertion wanted to put such a thing in train to be very characteristic.

Calystegia was originated by R. Brown from *kalyx* calyx, and *stega* a covering.



S Holden del & Lith

Begonia albo-coccinea

BEGÒNIA ÁLBO-COCCÍNEA.

(White and scarlet Elephant's Ear.)

Class.
MONŒCIA.

Order.
POLYANDRIA.

Natural Order.
BEGONIÀCEÆ.

Generic Character.—See page 77.

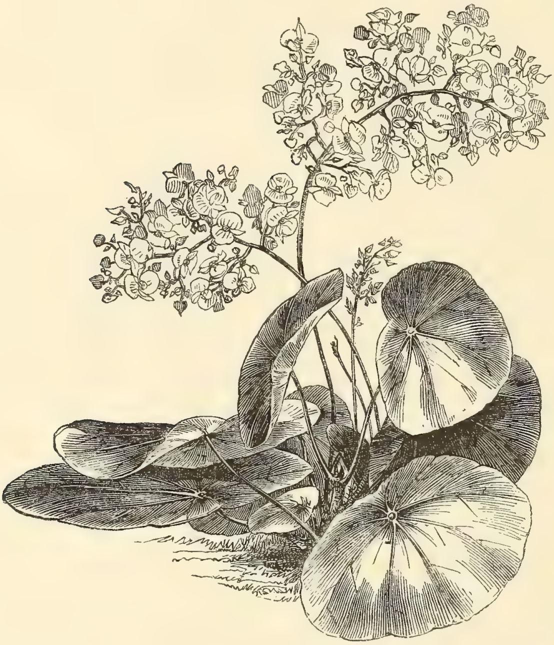
Specific Character.—*Plant* perennial, stemless, with obliquely-ovate or very obtusely sub-reniform, peltate, coriaceous, fleshy leaves. *Leaves* quite glabrous, somewhat lobed or sinuated, with longitudinal petioles. *Petioles* appressedly hirsute. *Sepals*, two of a roundish form, exterior, and conspicuously scarlet, the remainder smaller, obovate, and white. *Fruit* turbinate, three-winged; wings somewhat equally spread.—*Hook.*

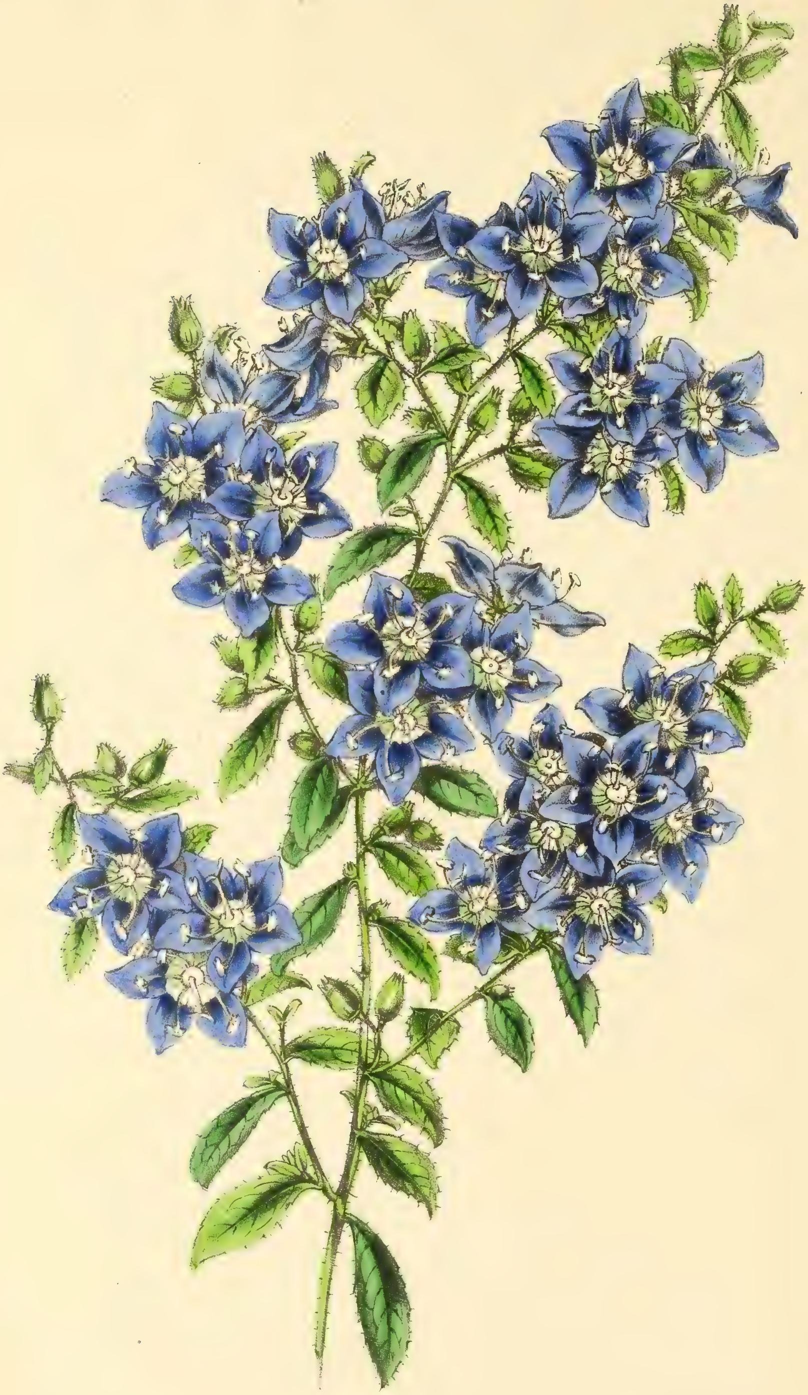
Publishing this species, and writing of *Begonias* generally, Dr. Lindley takes occasion to observe, that "Whoever shall apply the requisite leisure and skill to an examination and comparison of the numerous species belonging to the order of Begoniads, will be rewarded by a rich harvest of discovery. But he must look to something beyond the stems, the leaves, and the wings of the fruit, if he makes any pretence to a philosophical inquirer. It is in the seeds, placenta, and floral envelopes that sound characters are to be sought upon which sections and genera may be founded, instead of the vague characteristics hitherto employed."

The very fine member of the genus now given is said to be from the East Indies, which is all we know of its native habitat, there being no intelligence of the particular locality it inhabits. In this country it was obtained from seeds raised at the Royal Botanic Gardens, Kew, where it first flowered last year, and whence it has found its way into other establishments. Few can boast the possession of it, owing to the slowness of increase natural to the species; the crowns or shoots which do rise, in addition to being few, form very tardily. Its leaves, or parts of them, there is little doubt might be induced to strike, and help to multiply it, but they have been too few, and each one too considerable a part of such plants as have hitherto existed, and consequently too valuable to have been subjected to the possibility of destruction.

Beautiful and valuable as many *Begonias* are, there is scarcely one but that requires associating with some of its fellows before its beauty can be fully comprehended. They are so different to the generality of plants regarded as ornamental, that unless they are in some degree maintained characteristically, their features of interest do not seem to exist. *B. albo-coccinea* has only flowered in quite a small state, so that fine though it has proved, it has yet to exhibit itself properly. Early in spring, as far as we are yet aware, is the time of its blooming. Our drawing was taken at that period of this year in Mr. Glendinning's establishment, the Chiswick Nursery. It does not bear flowers to the extent and in the successional manner common to some of its allies, but those which it does produce have a considerable power of endurance.

A temperate stove, with the management in other respects Begonias usually experience, suffices for *B. albo-coccinea,* whose habit is shown by the woodcut.





S. Holden del & Lith.

Hydrolea spinosa.

HYDRÒLEA SPINÒSA.

(Spiny Hydrolea.)

Class.
PENTANDRIA.

Order.
DIGYNIA.

Natural Order.
HYDROLEÀCEÆ.

Generic Character.—*Calyx* permanent, of five sepals. *Corolla* rotately campanulate. *Stamens* inserted in the tube of the corolla. *Styles* two; *stigmas* depressedly capitate. *Capsule* two-celled; dissepiment placentiferous in the middle; *placentas* terete, spongy.

Specific Character.—*Plant* a dwarf shrub, evergreen, downy and clammy. *Spines* axillary, spreading, villous. *Leaves* ovate-lanceolate, acute, attenuated at both ends, nearly sessile. *Peduncles* five to six-flowered, villous. *Flowers* terminal, sub-corymbose. *Sepals* linear-lanceolate, joined at the base, villous and ciliated. *Corolla* blue, exceeding the calyx. *Capsule* glabrous.—*Don's Gard. and Bot.*

Synonyme.—*Hydrolea trigyna.*

It is not a little surprising, if the present plant has been making one of collections since the recorded time of its introduction, (1791,) that it has been so long in finding a place in the parterre, for which only it can be regarded as truly appropriate, and where, if it should do well, it will prove an acquisition. But we scarcely expect it has continued to exist with us from the period in question till the present, though without evidence of its having been lately re-introduced. We may leave, however, a consideration of these points, as it is sufficient, in giving an illustration of a plant similar to *Hydrolea spinosa,* in ancientness, beauty of floral organs, and for probable usefulness, that it exists, especially if it does so as abundantly as it does.

Naturally, it is stated to be found in South America, and to grow in moist situations, by streams and rivulets. Under culture the treatment it receives and flourishes upon does not indicate that it is a thirsty plant; it grows freely, and flowers equally so, in the greenhouse, without being dealt with in any manner differently to other greenhouse plants. Generally, however, it is viewed as a stove plant, and favoured with such a temperature as the inmates of that erection usually experience; we have known a large, profusely branching and flowering bush the result. But for all this, it is not fit for or scarcely worth cultivating as a pot plant, suitable as it is for a mass in the parterre. For this last purpose its habit renders it very appropriate, and the number and colour of its flowers exceedingly so. There cannot be a doubt about its success in the open air, though it has heretofore been looked upon and catalogued as an inhabitant of the stove.

We are anxious to lose no opportunity of impressing upon culturists the advantage of ascertaining what exotics we possess that will do in the climate of Britain. There are many among those which are ever regarded as stove plants that would compete with the most hardy in the summer season in that respect, if they had an opportunity of doing so. At the least, the fact of their doing well in the stove, and the possibility that they may not succeed out of it, should be no obstacle to prevent experiments having this object in view being tried.

Hydrolea spinosa increases with great facility by cuttings, and also seeds abundantly, but how far the latter are useful in producing plants, we have not had an opportunity of ascertaining; their formation occurs to such an extent under some circumstances as to require the repeated removal of the vessels which contain them, to enable the plants to continue vigorous. Our drawing was taken in summer, at Messrs. Rollisson's.

The generic name is one of Linnæus' founding; and is derived from *hudor*, water, and *elaia*, oil, alluding to the situation and nature of the plant.

RETROSPECT OF THE SEASONS.

The year approaches its close, and our labours will cease till we be in the very midst of winter. It will now be pleasant, and we trust profitable, to take a cursory, retrospective view of the past, as thereby the reader of observation may be enabled to compare bygone facts and phenomena with those which are yet to come. In the article for December last, 1845, we offered a few remarks upon the Phenomena of Winter, wherein an attempt was made to excite attention to modern discoveries of great import, concerning the relationship which exists between *Light*, *Electricity*, and *Magnetism*. Since that period, allusion has been made to the science of *Electro*-culture, and we now express a hope that, by the aid of future investigation, some great improvement will be discovered for effecting the protection of glass erections; woeful experience having proved that the comparative cheapness of the best and strongest sheet-glass affords very inadequate compensation for the sweeping devastations occasioned by the awful scourge of hail when it approaches, with a degree of violence almost amounting to that of the tropics. The storms of August have taught a lesson of grave import, which leads to the suggestion that *lightning conductors* or *paragreles*, ought to be erected in or near every valuable house. And we offer this opinion upon principle; for, as pointed metallic rods—those of copper particularly—act by plentifully discharging a vast quantity of electricity, so a thunder-cloud may be decomposed, or rather neutralised, by the operation of induction, the earth giving up its electricity of a contrary character to that contained in the cloud. Upon this natural fact, supposing a thunder-cloud charged with what is called positive electricity, to pass over, and not greatly above any building, defended by an efficient thunder-rod, the earth immediately below will be brought by induction into the negative condition. Now, under such circumstances, a flash of lightning may fall on that precise spot, in the condition of a thunder-bolt (to the focal point where the two agencies meet and neutralise each other—is called) and if it do not injure the erection by its own violence, may be, and frequently is, followed by a cataract of hail. A few pointed rods will scarcely fail to attract and draw off, silently, the charge, and produce an entire change in the cloud; but in order to do this, the rods must be connected with a perfect discharging train at some depth in the ground. This train, for the purposes of the garden, might consist of a number of copper or iron wires, about the substance of those used for ornamental figures adapted to plants in pots, made to radiate and branch out in every direction, in the moist earth. Moisture alone would be sufficient; but in dry summers it certainly would fail, as it did in August last. Therefore, bearing in mind this leading fact, the main rod itself should be placed so deep in the ground as in some degree to insure a moist bed; and then, by the aid of the branching wires, the electricity of the earth would be conducted to the rod, and thus be enabled to communicate with that of the cloud through its pointed termination.

That the importance of discharging trains may be appreciated we extract the following lines from Dr. Faraday's *New Researches*:—

"A good train was arranged by connecting metalically a sufficiently thick wire with the metallic gas pipes of the house, with the metallic gas pipes belonging to the public gas works of London, and also with the metallic water pipes of London. It was so effectual in its office as to carry off, instantaneously, electricity of the feeblest tension, even that of a single voltaic trough, and was essential to many of the experiments." An apparatus so delicate as that required for the refined experiments of the Royal Institution, cannot be necessary to the gardener or agriculturist, where an immense electrified surface is exposed to another of equal extent and power. All that is demanded is to elevate the point of attraction, and to see that the radiating system of wires at the bottom is always so deep as to insure the presence of moisture. Whatever may be thought of our hypothesis, or of the expense attendant upon its practical application, it will scarcely be doubted that the contingency of the loss of £500 worth of glass is worthy of being taken into the argument.

The above is a digression from the subject contemplated; but the consequence of the storms of August recurring to recollection, led us on to allude to a mode of prevention, which is worthy of strict attention, if the authority of many practical results be deemed valid.

The winter of the horticultural seasons assuredly begins in November: the leaves are then entirely shed, the roots are torpid, and that season of rest which experience proves to be of the greatest moment to all plants is quite established. Astronomy may require that the four quarters of the year date from the earth's ingress into the four leading signs which correspond pretty accurately with the shortest and longest days; intermediately also with those wherein the sun rises and sets about six o'clock; but gardeners should calculate their seasons according to the condition of plants as influenced by the inductive agencies of nature.

In the year 1844, at the date we start from, (November 21st,) every circumstance gave warning of a very severe winter, and it is well known that the anticipation was amply realised; for, with the exception of a portion of January 1845, all nature was locked up in frost, and the *forcing gardener* was tasked to the utmost extent of his vigilance to maintain any degree of temperature consistent with security and progress. Nor was this a matter of wonder, in so far that, to say nothing of the 10, 20, 25 degrees of frost, the sun was obscured for several weeks by a persistent covering of clouds.

In 1845, at the same period the temperature was mild, with three only very slight frosts during the last week of November; there were also three days more or less rainy; with plenty of sun at intervals. In December the weather became periodical. Thus from Nov. 30 to December 13, the sky was nearly cloudless, the barometer above the changeable mark, but rarely 30 inches, the wind being westerly, generally brisk. After the 12th clouds obscured the sun; it was a period of gloom. There were three hazy days, and as many of bright sun. The average temperature of the last five weeks of the year was at least 40 degrees. There were four night frosts, one of 5 degrees on the 22nd December, but on no occasion was a single day frosty throughout. Thus, half the winter had passed without any existing necessity to throw a mat over a glazed sash: our account, it is true, refers chiefly to the latitude of London; but as a consistent whole, we believe a milder season had not been recorded for years.

The gardener had little anxiety or trouble concerning his fires; but during the dark weather much care was required to obviate the effects of a damp, vaporous atmosphere; the utmost cleanliness, the removal of every decaying leaf, and the liberal admission of dry air, whenever possible, were preventives of great importance.

The new year came in fine, with brilliant sun, and lively north-west air; temperature, at three observations, 38, 46, 35 degrees,—and here we notice an unwonted rise in the barometer to the 11th day, when the mercury stood at 30 inches 53 cents; it then receded, but, as is frequently observed in January, in a high state of the glass, the heavens were almost wholly overcast, nor did the sun appear till the 20th day.

The wind had become south-westerly, with showers, and the general state of the weather, to the close of January, was cloudy-changeable, with lively wind by night; the *lowest* average temperature was fully *six degrees* above the freezing point. Vegetation was on the move. Fuchsias produced young shoots from the old wood; crocus and snow-drops were in flower, even the buds of the vine enlarged, and *Ribes sanguineum* gave assurance of very speedily producing the form of its clusters. The reader will, we hope, retrace similar phenomena.

February came in with a sunny day, and there was an alternation of fine, warm, and rainy weather during a week. Then the glass rose to "Fair" (30 inches several tenths); the weather cleared for a few days, but on the 11th clouds and rain predominated till the close. We marked four or five frosty nights, the 10th and 11th being the coldest, with 7 degrees. The averages were, however, high, and spring flowers advanced rapidly.

March brought in its many weathers—fine gleams, cloudy, with rain and hail; wind strong, westerly, till, on the 16th, after very heavy showers, it chopped to the north, and cold commenced. The 17th and 18th very cold, 4 degrees of frost; 19th, 6 degrees, wind east; 20th keen—*the Equinox occurred near midnight*; the sky brilliantly clear; the wind had been north, but it veered suddenly by south-east to south-west, just at this critical period; while the morning of the 21st dawned with great frosty rime, and eight degrees below freezing. The wind was forcible, and soon raised the temperature to 44 degrees, and rain fell. Subsequently the weather became very wet, and rain continued till nearly the end of April; in that month there were twenty-two days more or less rainy.

The effects of the equinoctial frost were striking, particularly on the blossom of fruit-trees. Still the *Fuchsias* in the open ground continued without injury, and did not require cutting down; the consequence was a very early and beautiful bloom, which followed in succession for many months.

The weather of May was chequered and mutable for three weeks; the wind fluctuating through every point, bringing rain and hail, and a few sunny days. The barometer was always low, but it began to rise steadily on the 21st, on which day we consider the summer of Horticulture to commence.

The temperature had hitherto been rather low, but remarkably equable, nights and days varying about 10 degrees, and averaging about 53 degrees; but on the 22nd the sun broke forth with a power rarely witnessed in these climates. The night had been cool (41 degrees), but by two o'clock the mercury had risen to 76 degrees in a north-east aspect, and thence to the 22nd of June there followed one blaze of sunshine, the days being far above 76 degrees, and on many occasions between 80 and 90 degrees. The nights improved gradually, but never became oppressive. The ground dried with great rapidity, and those gardens which were not favoured with a continuous supply of soft water had their crops much injured. All the annuals were stunted, unless watered twice a day; fruits—the little which remained—were coddled; and then we learnt, by fatal experience, that precocious summer heat and splendour, with all its beautiful concomitants, is attended with many drawbacks. It was perceived that heat and sun did not produce, in garden or field, that rapidity of growth which might have been expected; and as to glazed erections, the gardener had constantly to attend to shade. Of the methods of shading we have on former occasions offered a few remarks. Wealth can accomplish anything, but in ordinary cases no medium is perhaps more available than a free-acting roller, fitted up with a rather open fabric of calico or coarse muslin; the object being to cause a diffusion of softened light—not to obstruct the agency of the sun. We ought *now* to recollect that the beams combine electro-magnetism as well as *heat*. *Light*, therefore, is physically the *stimulus*, at least, if not the essence itself, of vitality.

We pass over the remainder of the summer, which is in the recollection of every observant culturist. The weather, doubtless, was very different in places remote from each other, but that it was a season of vast heat, of searching aridity, and of much mischief to fruits and flowers, no one can doubt. July and August brought their rains, but those in the southern and eastern counties failed to penetrate the subsoil. In the latter month those awful storms occurred which produced more mischief, and stir in the repair of glass, than any other of recent occurrence. Our remarks in the first part of this article may, we hope, be found useful. With the third week of August our summer terminated; yet if ever there were an exception, it was furnished by the late September, which, to the 22nd, or equinoctial day, retained all the fervid character of the finest period.

It is worthy of remark that all the great meteoric changes have occurred on the 21st and 22nd days. Again, a mutation is to be noted, for on the day of the autumnal equinox the wind veered by South—from East to S.W.—a brisk wind came on, and rain commenced, and to the 22nd of October it rained almost every day. Then came on cold and extremely wetting fogs, which seemed to predict early frost, but none occurred, and a south-west change restored the mild temperature of the air, our thermometers marking 60 degrees by day and 47 degrees at night, on November 4th!

Our concluding remarks will apply to the condition of glazed houses. We are late, but not too late to impress the necessity of cleanliness of walls, floors, flues, and plants. The nuisance of spiders ought to be considered, for hundreds of little *cocoons*, teaming with young broods, lurk in the crannies of walls and at the angles of sashes. These reptiles, if not very injurious, are unsightly. The *red acarus* is worse in all its varieties, and if sulphur be of any avail, it may be introduced in the lime-whiting of the walls and flues. Mildew and mould may be prevented by sedulous attention to the earliest removal of decaying leaves, flowers, and fruit.

All the appliances of heat ought to be foreseen, and its most available power provided for, as well as the means of checking and abatement, by the perfect condition of the furnaces. We say nothing now on the best machinery, for we believe that much doubt still prevails; but it is our object to insist on the necessity of having the instruments, whatever be their form, in the best working condition.

If the weather continue open and mild, particularly if there be much haze, or drizzling rain, the gardener's utmost care will be tasked to obviate the danger arising from humidity. If frost prevail, certain degrees of fire-heat must be maintained; but, with dry air, even a low temperature will do far less injury than too much moisture. Early and close coverings by that best of all defences—straw mats—are far more salubrious than artificial heat.

Having thus glanced at the meteorological phenomena, and some of their effects, of this remarkable year, we close our observations till we meet our readers again, as we hope to do, in February, 1847.

ON CONGRUITY IN LANDSCAPE GARDENING.

NOTHING is more offensive to a correct taste or a well-regulated judgment than incongruity. Even in personal character, the act that is inconsistent with other acts, or the element which does not harmonize with other elements, is regarded only as an infirmity and a defect, detracting much from any estimate formed of the individual by others, notwithstanding partiality or affection may exist sufficiently to exert a contrary influence. The physiognomist, moreover, will have his admiration for beautiful features greatly diminished if there be a want of general symmetry, or of unity in expression.

But the lower we descend in the scale of Nature, and find ourselves more relieved of all those intellectual and moral characteristics which *must* have some power over us in determining our appreciation of an object, the more clearly do we find men agreeing to reject and denounce all that is inharmonious, and to demand the last possible perfection of accordance in every part of whatever subject is presented for their examination. It is thus that men look, in nature, for something like unity of character; and, so far from harsh and abrupt contrasts being most agreeable, the harmonious in outline, arrangement, and colouring, attracts most firmly and durably.

It may be, however, that an objection will here arise in the mind of some readers, from considering that rugged and thorough transitions in a natural landscape are most arresting, and rivet the attention and excite the interest of an observer more surely than would be done by a quieter and more regular scene. The eye, in passing over a district will at once be brought to a stop by such features, and the most careless traveller will have his attention caught. But in this, as in many other matters, a most important rule will apply. It is not what brings the indifferent to a momentary pause, or startles the man of taste, that is to be regarded as conforming best to the constitution of the human mind. It is rather the prospect or the thing on which he who has cultivated his mind and his taste most completely can rest with complacency, or which he can contemplate with expanding delight, or revel in with unabating pleasure, that is to be considered most harmonious with the nature of man. And hence arises a practical axiom, which is weighty enough to allow of its introduction here, that we ought to strive after the attainment of that excellence which is sure to satisfy men of refinement and ability, resting assured that the multitude who are less competent because less educated and informed, will, by frequent gazing, also become admirers.

If, then, as we have shown, men seek, by a kind of uniform habit which amounts almost to an instinct, for a tolerable degree of concord in the parts of whatever is offered to their inspection; and if we see them—as we assuredly shall see them—expecting and requiring a higher amount of such concord in proportion as the thing examined passes farther from the mental and the ethical, and becomes more exclusively material; and if, further, in proof of the last position, we observe them to be most pleased with the natural landscape that is harmonious without being monotonous, and well connected together at the same time that it is sufficiently varied—we shall naturally assume that they will be even more rigid in applying this law to works of art. And our assumption will speedily be found true.

What we have said is correct in its application to painting, sculpture, architecture, and all the imitative and decorative arts. A thing of which any portion does not agree with all the rest—in which one style is not maintained throughout, which has not one expression—will, unless it be so far disjointed as only to be taken in by the senses at comparatively distant intervals, always be regarded as defective in the degree to which it departs from either of these characteristics.

Landscape gardening is embraced, still more emphatically, in the same rule, because, while it professes to copy nature in its general principles and arrangements, and thus comes within the expectation of congruity which men entertain towards unassisted Nature, it is also strictly an art, and for this reason an additional and closer adherence to congruity is required.

Although, however, as we have thus endeavoured to establish, the law of congruity is so universal and so deeply-rooted in men's minds, there is perhaps no principle which, in landscape gardening, is more extensively violated. Objects which have the most opposite expression are sometimes brought into near connexion and even contact with each other. Fragments of scenes, having a peculiar character, are thrust into the midst of a tract, the prevailing characteristics of which are directly the reverse. A formal and rigid style is promiscuously intermingled with a flowing one; the ornate and the picturesque are jumbled together; architectural enrichments and rustic decorations stand side by side; and, in short, there is scarcely a garden in Britain in which some species of this deformity may not be traced.

In order that particular instances of this impropriety may not be lost sight of amid mere generalisations, or the sweeping assertion we have made be taken in too wide a sense, and therefore fail of its individual application, we must observe, that we do not consider any strict kind of congruity necessary, except as regards objects which may be taken in by the eye from one point. A domain may be broken up into an indefinite number of separate scenes, each having a very different character, and no interference with our rule be discernible, provided each of these scenes be rendered harmonious in itself, and be gradually blended with another different scene upon which it opens at any part.

To explain still further what we mean, a mansion may be and ought to be so situated as to take in a very extensive range of prospect, in and beyond the estate of its owner. But the landscape gardener is not called upon, in conformity to the law of harmony, to exclude all but one class of scenery from the view. He is only bound to arrange the several parts so that each passes gradually into the other, and thus all harmonise. For example, the architectural character of the house is connected with the garden by terraces, vases, statues, or other similar ornaments. Beyond this again, the highly dressed pleasure-ground extends; then the remoter and less ornate parts of the same; then the park, woods, hills, and picturesque and varied Nature in the distance.

If a place be sufficiently large, or the nature of its surface will allow, or the taste of the proprietor—willing to surmount natural difficulties—desire, the landscape gardener may, in addition to the general views from the house we have just described, break up an estate into several distinct parts, and give to each of these a character of its own. What we maintain in such case is, that these separate parts, with their peculiar distinguishing features, should be quite isolated, so as not to damage the general harmony. Or, if in any way or at any point they mingle with the rest of the garden, their peculiarities should be softened away at that point, and merge into the prevailing style. Thus, a rock and root garden and grotto, a conservatory with its accompanying flower-gardens at a distance from the house, a picturesque ravine and its dashing stream, a temple with its attendant flower-garden or dressed ground, and many other objects, should be placed apart, in a spot by themselves, and only be so far a portion of the greater landscape as that the trees by which they are inclosed shall fall into those forms and outlines which contribute to the comprehensive effect of the whole.

We have yet spoken but generally, and though our extremely small limits will not permit us to go much into detail, we shall now mention a few more particular cases. That a cemetery should, in its arrangement, if possible, and especially in the trees by which it is planted, express the character and purpose of the place, is a well-recognised rule, still it would be most difficult to find an instance in which this requirement is met. The place for the dead should be sombre, funereal, impressive, sad. The plants should be chiefly evergreen, with dull rather than shining leaves; or, if deciduous, those with slender foliage, or pendulous branches, or climbing habit, seem to be most appropriate. And all this is demanded for the sake of congruity.

Again, how fit it is that a rock or root garden should be planted with slender-growing, small-flowered plants, with ferns, with trailing species, with crooked and rugged and weeping trees, and with evergreens rather than deciduous plants; that it should be as far away from the house as possible, that it should be shut in by itself, have not much glare of sunshine upon it, be approached suddenly by a by-path, have the walks through it as rough and rude as is consistent with comfort, and any water that may be attached to it either flowing constantly in a rushing stream, or kept broken round its margins with jutting rocks and wild plants, while its surface is at least half covered with varied aquatics.

Buildings of various kinds, sculptured figures and groups, vases, &c., are often placed about gardens, particularly those of great extent, and such as are laid out in a formal manner. Not only should the position of these and the style be judiciously chosen, so that they do not come into sight from the house in a general way, nor occupy sites ill adapted for them, or in the neighbourhood of other objects with which they will not agree, nor exhibit a style at variance with the character of the place, or the precise situation they occupy, or the purpose they are to answer; but considerable attention should be paid to surrounding them with appropriate scenery, and planting trees or shrubs about them which will aptly develop the particular expression given to the building itself by its style and object. The plants we have mentioned as being suitable for cemeteries are likewise proper accompaniments to a church or chapel. A flower-garden, with or without its congenial architectural adornments, is best suited to attend a conservatory or plant-house that is not connected with the mansion. A temple may in some measure be aided in its effect by planting around it those trees and shrubs which most harmonise with the purpose to which it is dedicated. A ruin, any ancient erection, or a cottage has its characteristic decorations among trees, shrubs, or climbers. Sculpture and vases accord best with the architecture of a house to which they have some proximity, or a flower-garden laid out in regular figures, or a long straight walk or straight piece of water; in fact, they are proper in any garden where straight lines and geometrical forms prevail.

A considerable amount of incongruity may be occasioned, and actually exists in some gardens, by an attempt to engraft one style of gardening upon another, or to introduce one kind of characteristic into a place which has previously been peculiar for a character of another order. It is perhaps true that, there is scarcely any pure style now practised in landscape-gardening; but there are classes of landscape arrangement wholly opposite to each other which are sometimes striven to be united in a strange and unnatural compound. And wherever one class of disposition is fixed upon for a garden, or has already existed in it for years, it is most necessary that everything new which may be done should be carried out in the same character.

There are several other topics on which we might remark, had we space. Indeed, the bearings of this question are extremely extensive and diversified. The incongruity of having the carriage entrance to a mansion in a cattle-fed pasture or park, instead of its being surrounded by pleasure-grounds; of putting pieces of water anywhere except in the lowest ground within sight; of planting trees which are naturally fitted for low moist situations upon mountain sides and hill-tops, and the reverse; with almost numberless others, might be individually dwelt upon and exposed But it must suffice for the present, as in most cases of the kind, that we have drawn attention thus sketchingly to a circumstance which so greatly affects the appearance and consequent enjoyment of a pleasure-garden.

CONIFERS AND TAXADS.

(*Continued from page* 234.)

This subject is thus early returned to, for one reason, because it is desirable to conclude one paper in the present volume, and further, in consequence of the season we are passing through being the most proper one to deal with the class of things written of. What has been advanced up to this point, embraces the most important part of that which necessarily requires attention; but there is yet room for much to be said. In having to do with *Conifers*, &c., and in trying to render them justice, the course recommended to be taken when root-confined plants are met with, and the other matters relative to planting, suggests all that can be resorted to to place a plant in as favourable a position, as far as its doing well is concerned, as possible. But much that has been suggested, when it is put in force, may accomplish, it cannot atone for abuse a plant may have experienced, restore beauty that has been lost, or very seldom enable it to hide the blemish such loss involves. This is true of all *Conifers*, and evident in proportion as they are remarkable for symmetry or otherwise. What we regard as beauty in a *Conifer* is the perfect development of all its parts, when those parts are regularly and symmetrically disposed; and what that beauty's destruction—such a state of things interfered with, whether the interference proceeds from accidental or natural causes. The effect produced by the working of the latter we have not much control over, but that produced by that of the former is wholly preventible; and should not, therefore, by any means, be allowed to occur. The way to ensure that it does not, is to take plants while they are quite young, before any stunting or deformity has begun, and favour them in every possible way. No restrictions to roots and branches freely advancing should be opposed; but all encouragement given by planting them well in the situation they are destined to occupy. If, owing to rareness, and value from other causes, it is decided to be more careful of, by growing any for a time in pots, an equal degree of freedom should be afforded, and, under either circumstances, certain shelter may be advisable; for they are liable to injury from sources the generality of culturists may not be aware of; one of which is, that some kinds of game do not scruple to devour many *Conifers;* even one, among others, so formidable as the Chili Pine, is not free from their attack.

If the foregoing hints are acted upon, notable results will ensue; such as speak for themselves. It must not be fancied that so very complete a state of things as regards the beauty of *Conifers*, is not worth the trouble of attaining, that trees soon outgrow deformities, and grow away from symmetry and the like: similar reasoning to this would not be thought of in the case of household furniture and decoration; then, why apply it to the furniture that adorns the lawn, &c.?—for we ought as little to think of putting up with a deformed shrub or tree, as rest content with a damaged parlour ornament or broken fixture of the drawing-room. Either may be bearable under certain circumstances, and in their proper place. The latter, for instance, as curiosities associated with assemblages of their kind; and wayward-shaped trees or shrubs may be planted upon or near to rockwork, where they can often be introduced with a peculiarly happy effect. We enlarge so much here because many *Conifers* are exceedingly regular and uniform in shape, and the peculiar charm of their appearance principally consists in this feature; hence is it most advisable to take every step that tends to unfold and guard it. Of the other objection, against so much attention being given to *Conifers* in the young stages of their growth, because they become less beautiful as they increase in age and size, it remains to be observed, that rightly applied, the objection becomes an argument in favour of what we would wish to see extensively in force, and for the very simple reason, that it is as young trees only any individual can hope to derive gratification from specimens with which pains may have been taken.

Planting *Conifers* on elevations that exist naturally or are produced, affords abundant evidence, as the plants increase in size and expand into their true shapes, that it is a judicious and indeed a necessary practice; necessary, at least, if the appearance to the greatest advantage of the merit of a specimen is of consequence. The Chili Pine and Indian Cedar (*Cedrus Deodara*) in particular—and most of the large-growing kinds in the Order, to a greater or less extent—get very heavy in age much more so than their appearance indicates, which is another reason why they should be planted on a raised site; for a consequence of the heaviness in question is the drooping of the—in some cases already pendent—branches. This drooping disposition should be amply provided for by planting sufficiently high, and the specimens as much isolated as circumstances will allow; for it is indeed an exquisitely charming feature, all the more lovely in the character of a *Conifer*, because existing in perpetual freshness. But it especially needs setting off to advantage, so much so, that if it is not, a painful rather than any other effect is created, as is shewn by things naturally inclined to droop when they happen to be growing in low situations, or are so placed that they seem beneath the eye, and therefore lost, whatever may be their capabilities of creating effect.

We must not fail to observe, before concluding remarks that relate, if not directly, indirectly to planting, that a specimen which may have been many years growing in an important position, and happens to have experienced ill usage before being planted there, and is stunted, making little progress, may have its roots set at liberty, or be raised properly into view, without any fear of harm accruing from the performance of the operation, the necessary care being taken in its accomplishment.

On the liability of *Coniferous* plants to injury from severe weather, not from extreme cold and frost owing to its intenseness, but from its occurrence at periods when vegetation generally is most open to injury from it, as late in winter and early in spring, it will suffice to observe, this kind of severe weather, it is too well known, often produces very disastrous results in the vegetable kingdom, but in no portion of it more lamentable ones than it does among *Conifers*. They, after their bursting buds are destroyed by frost, may be regarded as ruined, owing to their not being provided like other plants with latent buds. We have known strong trees of the commonest species rendered a complete wreck, with every bud destroyed, by the occurrence of such weather as that alluded to, when the newly forming shoots and leaves were beginning to appear. The aptitude of *Conifers*, &c. to suffer so extensively from a visitation of the kind described, is all the more lamentable because there does not exist a possibility of sheltering them to any extent, and on a large scale, even if there were always an indication of the approach of that which it is necessary to shelter them from, which there by no means is; and all that can be done in the way of preventing the mischief is to protect the main or leading shoot by surrounding it with some suitable material. It only requires guarding from frost at the time it is about commencing to grow, and therefore the protection need not be of a formidable character, nor long employed. The watchful guarding from any kind of injury of the leaders of numerous *Conifers* until the tree is established and strong beyond the fear of harm, is an almost necessary care, in consequence of the value of that shoot in an ornamental light; and the difficulty,—indeed, in nine cases out of ten, impossibility, of training another to adequately fill its place. Nature sometimes does, under such circumstances, what art cannot, by producing a shoot that immediately becomes an acceptable leader, and eventually a very passable one. Without a good erect-growing leading shoot, one far ascending above the other branches, the great beauty of such magnificent things as Douglas's Spruce (*Abies Douglasii*), and the Noble Silver Fir (*Picea nobilis*), descends into littleness; but with one, and that healthy and strong, those species, in common with most in the order, will make way and continue more than proportionably handsome, though they should be without any other living buds than those the leader possesses.

To the usefulness, necessarily, the picturesque usefulness of *Conifers*, we will now briefly advert. The most extensive field for the exhibition of this feature of their character is the landscape; consequently in beautifying the face of a country by investing it with a warm and cheerful aspect in winter, and rendering it more varied by the contrast of their sombreness with all that is fresh and animated in summer, the common kinds are conspicuously serviceable. At most three or four species only are thus employed, and those seldom directly for the purpose in question, being in a general view of the case more often planted as "nurses" to young trees, shelter for dwellings, farm establishments, cultivated land, &c. But this is rather straying from our object, which we allow ourselves to have done, that we may return by remarking upon the likelihood of many *Conifers*, &c., that are now only maintained as rare ornamental trees, being largely used, before long, in the way the Spruce, Scotch, and Silver Firs are now. That they are very eminently superior, as far as the creation of effect is concerned to the kinds mentioned, there can be no disputing, as little can it be doubted but that they are equal to them in most other respects.

This is considering the picturesque serviceableness of the *Conifer* family upon the broadest basis it can be regarded as occupying; but if we recede and take a more confined view, examine to what extent they can be rendered serviceable in beautifying our gardens and grounds, it is discovered there is equal cause for congratulation; for, in forming clumps of evergreens, and belts of trees as connecting links between the grounds and their outside, in introducing single specimens, &c., we can in no way dispense with some of the many *Conifers* there are; but largely profit by extensively using them. There are several species, as the Prostrate and Tamarisk-leaved Junipers, the common Savine, &c., *Juniperus prostrata, tamariscifolia* and *Sabina*,) especially suitable for rockwork, planting on banks, mounds of earth, and in such like situations; which frequently occur in grounds, and often could be greatly improved by being wholly or partially covered with such things. There is a variegated variety of the common Savine, a most pretty prostrate shrub, and the Clanbrazil's Spruce (*Abies Clanbraziliana*), a remarkable little Fir, growing a few inches high only, and many others equally appropriate for the last-mentioned purposes.

In concluding, we purpose taking a partial review of *Conifers*, &c., and giving slightly detailed accounts of some of the most prominent and deserving species in the Order; and, in doing so, the names by which they are mentioned will be those they are best known by.

The Chili Pine, as being among the most magnificent hardy ornamental trees known, first deserves mention; but mention only, from its being so familiar to most culturists. It propagates by seeds; when well and favourably placed grows rapidly, attaining an immense altitude—the female tree, at least, does so. It is the latter that is valuable, in consequence. The male tree is stated to grow only a third as lofty as the female, which towers up from fifty to a hundred and fifty feet, and has been with us since 1796. 1822 brought our collections acquainted with the Indian Cedar, which came from Nepal, attaining a similar height to the Chili Pine, is as well known, and increases with facility by seeds, cuttings, and by grafting.

Pines are probably the most extensive family in the Order; several score species and varieties are catalogued as composing it. The members of the genus do not, perhaps, differ so much as may be imagined. In the colour of their foliage and style of growth they cannot boast much dissimilarity, though they may great variation in the length of the leaves. The Long-leaved Pine (*Pinus longifolia*) is the most striking in this respect. It is a large-growing tree, with leaves a foot long, is a native of Nepal, whence it was introduced in 1821.

The Ponderous (Mr. Sabine's and Coulter's Pines) approach the long-leaved species as far as regards their foliage; and the three attain similar altitude, reaching from fifty to a hundred feet; were introduced between 1826 and 1832, the two latter coming from California, and the first from North America. These species are typical of those remarkable for grandness, several more of which there are, and numerous beneath them, so to speak, descending in various degrees of resemblance to the Scotch Fir. The Upright Pine (*Pinus excelsa*) is a really beautiful species, rather close-growing, with charming silvery-green foliage. Another is the Remarkable Pine (*Pinus insignis*), which has a dense habit and dark green leaves. It is a fine and very distinct species, a native of California.

Of Silver Firs, the genus *Picea*, perhaps, the Great Silver Fir, (*P. grandis*), a native of California, of recent introduction, and growing two hundred feet high, is the finest. The Noble Silver Fir (*P. nobilis*) is a most beautiful species, a natural neighbour of the last, grows to a great size, and is a charmingly regular and beautiful grower. Webb's Silver Fir (*P. Webbiana*) has something very original and noble in its character. It grows nearly a hundred feet high, and is from Nepal.

Spruce Firs (*Abies*) are better known than the preceding genus. Douglas's splendid kind is now comparatively common, but notwithstanding, we may state it reaches naturally near two hundred feet in height, inhabits North America, and was introduced from thence in 1826. It propagates freely by layering, grafting, &c. There are other species in the genus less known than *A. Douglasii*, but nearly equal to it in magnificence, which space compels us to exclude further notice of.

If we were to enumerate a tithe only of the many charming things in the Order *Coniferæ*, we might occupy several pages, and still fail to do them justice, for there are several species in the genera, *Thuja*, *Cupressus*, *Juniperus*, &c., that both on account of novelty and peculiar beauty, deserve a separate notice. In another place, as opportunity occurs, we may remember them.

As far as culture is concerned, the treatment suitable for hardy *Conifers* is equally applicable to those of a tender description, therefore much that has been written upon the former, strictly applies to the latter kinds.

FLORICULTURAL NOTICES.

NEW OR BEAUTIFUL PLANTS FIGURED IN THE LEADING BOTANICAL PERIODICALS FOR NOVEMBER.

Æschyna'nthus minia'tus. "This plant is readily distinguished by its very short, dish-shaped calyx, which has scarcely any distinct marginal lobes, and its vivid vermilion-coloured flowers, with a yellow star in the throat. It yields to none in beauty, and is much finer than Vander Bosch's Æschynanth, lately imported from Belgium. It seems to be identical with the Sincapore plant, formerly distributed by Dr. Wallich under the name of *Æ. radicans* ; but it cannot be the species of Dr. Jack, which has villous leaves and a tubular shaggy calyx, with a five-lobed mouth. It is probably, however, the *Trichosporum radicans* of Blume, a common Java plant, which M. Alphonse De Candolle has suspected to be a different species from that of Sumatra."—*Bot. Reg.*, 61.

Æschyna'nthus pu'lcher. "To this splendid plant we alluded under an equally handsome species, *Æ. Lobbianus*, figured in our last Number, tab. 4261. It was sent from Java to Mr. Veitch of the Exeter Nursery, by his collector, Mr. T. Lobb, under the name here adopted, and is probably known in that island as the true species so called, otherwise we should scarcely have guessed it to be the same plant, since that species comes into De Candolle's division, 'pedunculis axillaribus biflorus.' The description, however, is in that particular at variance with that of the section, for the peduncles are said to be 'fasciculated, axillary, and terminal.' It is chiefly distinguished from *Æ. Lobbianus* by its broader leaves, shorter tube of the calyx, quite glabrous and very much more exserted tube of the corolla. It flowers in June and July, and was exhibited at the Chiswick Horticultural Show about that period."—*Bot. Mag.*, 4264.

Bo'lbophyllum umbella'tum. "This pretty Orchideous plant was presented, with many other varieties, by Dr. Wallich to the Royal Gardens of Kew, where it flowered in August, 1846. It is a native of northern India, of Nepal, and the Khasiya hills, and recommends itself to our collections by its prettily-spotted flowers and the curious column and lip."—*Bot. Mag.*, 4267.

Cle'matis cri'spa. "The plants cultivated in gardens, or mentioned by modern authors under the names of *C. viorna*, *crispa*, *reticulata*, *cylindrica*, *rosea*, &c., present a scene of confusion such as is rarely seen even among Botanical compilations. Everybody has every one of these things, but each has something different from his neighbour. This has arisen from the unskilful, not to say careless, manner in which the modern writers on *Clematis* have fulfilled their task. We entertain no doubt that the species now produced is that of Dillenius, with whose account it exactly agrees. The sweet-scented flowers, pale purple, and contracted in the middle, the crisp edge of the sepals, the long, narrow leaflets, are all characteristic, and the condition of the fruit, which we have not seen more than three-quarters ripe, is not at variance with it. It has been re-introduced to gardens by Messrs. Maule and Sons, of the Stapleton Road Nurseries, Bristol, to whom we are indebted for our specimens. It was raised by them from North American seeds, marked 'a new *sweet-scented Clematis*,' and it well deserves that name, for its fragrance is most agreeable, especially towards evening. It flowers incessantly during all the summer, that is to say, from May to October, and it seems likely to go on blooming as long as it remains in a growing state ; on account of its constant flowering we had called it *C. semperflorens*, until we ascertained that it was the real old long-lost *C. crispa*. It is in all respects a charming hardy species." Synonyme, *C. floro crispe*."—*Bot. Reg.*, 60.

Eu'calyptus Preissia'na. "A handsome tree-like shrub, with the foliage fragrant (like that of the Myrtle) when bruised, and flowers of rather a large size, rendered more conspicuous by the copious yellow stamens, spreading far beyond the diameter of the cupula. It is a native of Western Australia, whence seeds have been sent from De Preiss, of Swan River, to the Royal Gardens of Kew, and dried specimens both by him and by Mr. James Drummond. De Preiss's specimens are more distinctly indicated as natives of Cape Riche (No. 209, Preiss Herb.), and as rising to a height of eight feet. Our plant flowered in the summer of 1846, where it had attained a height of five feet. It thrives in a cool greenhouse, and in the summer is the better for standing in the open air."—*Bot. Mag.*, 4266.

Garde'nia Devonia'na. "This glorious plant is a native of Sierra Leone, whence living specimens were imported by Mr. Whitfield. It is perhaps the finest of its noble race, and is, we trust, worthy of the name which we have ventured to confer upon it. Handsome as Lord Derby's *Gardenia* certainly is, it is as far removed from this as an earldom from a dukedom. The flowers are nearly eleven inches long, pure white at first, but after a time changing to a light straw-colour, and look much like those of a huge white lily."—*Bot. Reg.*, 63.

Leschenau'ltia arcu'ata. "A singular and truly handsome species of *Leschenaultia*, exceedingly different from every other known one, having copious, spreading, decurved *branches*, with innumerable *branchlets*, almost every one of which is terminated with a large red-purple and yellow flower. Raised by Messrs. Lucombe, Pince, and Co., at their extensive nursery, Exeter, from Swan-River seeds, sent by Mr. Drummond. It is a greenhouse plant, and noble samples were communicated by the cultivator, from which our figure is made. The flowers have a good deal the appearance of those of the large shrubby Polygalæ of South Africa, but here they are exceedingly numerous upon a small plant. Flowers in August. Mr. Drummond has long ago sent home copious dried specimens of the species."—*Bot. Mag.*, 4265.

Scutella'ria incarna'ta. "From the rich collection of the Exotic Nursery of Messrs. Veitch, who received the seeds from Professor N. Jameson, of Quito, gathered on the western declivities of the Andes. It is a greenhouse plant, and being readily increased by cuttings, will doubtless be a great ornament to our flower-borders, if an entire bed is devoted to it. Flowers in July and August." An erect-growing plant, reaching a foot or a foot and a half high, with slender opposite branches, and opposite ovate or ovate-lanceolate leaves, bearing terminal, many-flowered racemes, the corollas of whose flowers are deep purplish rose-colour.—*Bot. Mag.*, 4268.

NEW OR INTERESTING PLANTS RECENTLY FLOWERED IN THE PRINCIPAL METROPOLITAN NURSERIES AND GARDENS.

Bego'nia fuchsioi'des. Singular as it may appear, this plant is appropriately named, and probably as much resembles a *Fuchsia* in appearance as a *Begonia* can do. It grows tall, has slender, partially red, and rather pendent branches, which throw out numberless alternate branchlets, that, in their turn, bear alternate, oblique-lanceolate, smooth leaves. Terminally from its branches and most robust branchlets, proceeds the rich scarlet, very pretty, drooping flowers. Messrs. Veitch, of Exeter, sent a specimen to the last meeting of the Horticultural Society in Regent Street.

Clerode'ndron. With the above plant was a member of this genus, a native of Java, with large, broadly-lanceolate, black-green, opposite leaves, bearing from every axil of the latter a large panicle of flowers, whose principal feature is a whitish, rather small, four or five-cleft corolla, darkest coloured at the base. The flowers are slightly fragrant, and are produced in such numberless quantities as to constitute as a whole, with the leaves, quite a pyramid of inflorescence and foliage.

Hoy'a. Mr. Glendening of the Chiswick Nursery, exhibited at the November Regent Street meeting of the Horticultural Society, a New Holland species of *Hoya*, having opposite, oval-oblong, fine leaves, and bearing rather large axillary clusters of smallish white flowers, which were not fully expanded.

Læ'lia Perri'nii ma'jor. In one of the Orchid-houses at the Exotic Nursery, Chelsea, a *Lœlia* bearing this name has flowered. It is altogether larger than *L. Perrinii*, with more slender and much longer pseudo-bulbs, more highly-coloured flowers, and a differently-formed lip, that has its lateral lobes meeting above the column, so as to form, in conjunction with the middle one, a large oblong mouth, whose edge is marked all round, in the way the margin of the petals of a Picotee are, with light purple.

Onci'dium ungui'culatum. This Orchid is an importation through some of the many Orchid sales that have of late taken place in London. When blooming, it is rather a naked-looking species, but bears fine large flowers. Its pseudo-bulbs are oval, two or three inches long, and its leaves about a foot in length. From the former ascends the flower-scapes, several feet, bearing numerous flowers scattered over their branches, that have yellowish, spotted with brown, sepals and petals, and a large, bright, clear, yellow, three-lobed, long-clawed lip. G. B. Warner, Esq., exhibited a fine specimen in flower at a recent Regent Street meeting of the Horticultural Society; and the Messrs. Henderson, of Pine-Apple Place, have flowered it.

OPERATIONS FOR DECEMBER.

It often occurs, that a great deal of the business of the culturist, usually regarded as spring-work, may be much more comfortably got through at this period than in the spring. Out-door operations chiefly can be better attended to, and if they can only be more comfortably performed now than hereafter, it is a great deal; but when it is remembered the advantage of doing such work at this season does not stop here, it is something more; and it does not, inasmuch as by attending to business in time, there is sure to be an opportunity of doing it well; not only because it need not from necessity be gone through hurriedly, but also from the chance there is of working under advantages now that can hardly be expected to prevail in spring.

A great deal of pruning may be done in the present month that is often left untouched till the spring, such as the pruning of all hardy shrubs, trees, and climbers; any Roses whose flowering at a particular season is not an object of care, and other flowering shrubs, can be so operated upon. We do not wish to be understood as recommending everything in the way of pruning to be done now, nor at any one time, that could be done, as that would not be advisable, for reasons that have been more than once given, to which we beg to refer. Forking shrubbery and herbaceous borders over, leaving them as rough as circumstances will permit, to enable the soil to be well mellowed by winter, should be practised. The roots of plants occupying these borders will experience no injury by the soil being disturbed and laid light for the winter, if care be taken that they are not mutilated. Indeed, the plants will be benefited and rendered the more secure from frost by its being done.

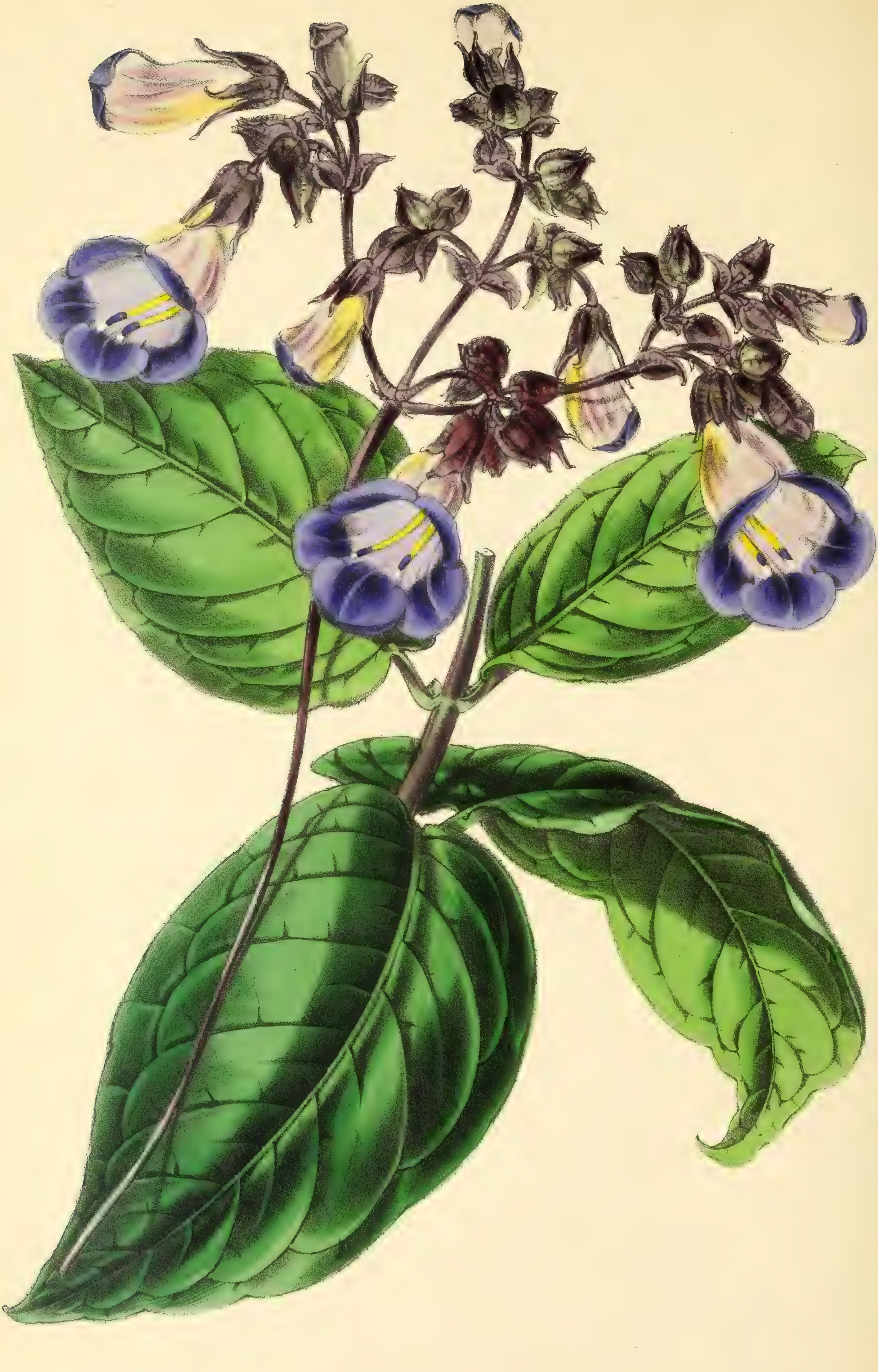
In many places, fallen and falling leaves abound, and are troublesome: they should still be collected and preserved, to produce that valuable ingredient leaf-mould, and, in forming it, made serviceable as fermenting material to produce bottom-heat.

All manner of ground work should be proceeded with; and in making alterations where new and fresh soils are used, let economy be kept in view. Every remnant and all parings of turf should be preserved and find its way to the compost yard, there to get into a fit condition for the plant culturist. Now is the season for laying in a new stock of the various earths, and for examining the stores on hand, exposing them as much as possible to mellow, &c., if necessary.

The flower-garden grounds and every place of resort ought continually to be kept in as good order as circumstances will enable them to be. Let the lawn and walks have attention to sweeping and rolling being practised upon them. Naked ground should be broken up, and exposed to influences that will improve its condition, which it may require. If a great extent of the latter exist, and is much open to view, a few evergreens might be studded over it, although winter decoration of the flower-garden may not be cared about. The protection of tender things will have attention in proportion as the things to be protected are valuable or not. Material for the purpose cannot be in too complete a state of readiness. Where shelter of a permanent character is required, it is best to make substantial provision for such, early and at once. Let planting have due attention; this has been a fine season for pursuing it.

Among plants in every structure, except the forcing-house or pit, quietness should be the order of the day. Use not a drop more water than is requisite, and remove everything removable that originates damp. Admit air to each of the collections as freely, and to as great an extent as can be done. This last direction should be in full force in the case of greenhouse and flower-garden plants. No opportunity of propagating scarce kinds of the latter should be lost. Keep them free from insects, dying leaves, &c., and stop soon enough shoots that happen to be growing and are not wanted for the purposes of increase. Any plants that should be growing—and it is more than probable there will be some in the stove or Orchid house—must have all the light that can be given them, sufficient moisture, warmth, &c. Be very cautious in the use of water among Orchids; that element is a ready agent of destruction among this family at the present period.

In the way of flowers, first have regard to those gems which come naturally at this season, to whatever families they belong, and take every care of by giving the plants a good position. Continue to carry out last calendar's instructions in the case of the forcing-house.



S. Holden, del & Lith

Chirita Zeylanica

CHIRÌTA ZEYLÁNICA.

(Ceylon Chirita.)

Class.
DIDYNAMIA.

Order.
ANGIOSPERMIA.

Natural Order.
CYRTANDRÀCEÆ.

Generic Character. — *Calyx* deciduous, tubular, five-cleft. *Corolla* tubular at the base, ventricose at top; limb campanulate, five-lobed, bilabiate; lobes rounded, imbricate in æstivation. *Stamens* two, antheriferous, inclosed, sometimes without any rudiment of a sterile one, and sometimes with three; filaments glabrous; anthers roundish, naked, adnate. *Stigma* bipartite; lobes linear, obtuse. *Capsule* siliquose, two-celled, many-seeded; dissepiment parallel. *Seeds* naked, acute at both ends.—*Don's Gard. and Bot.*

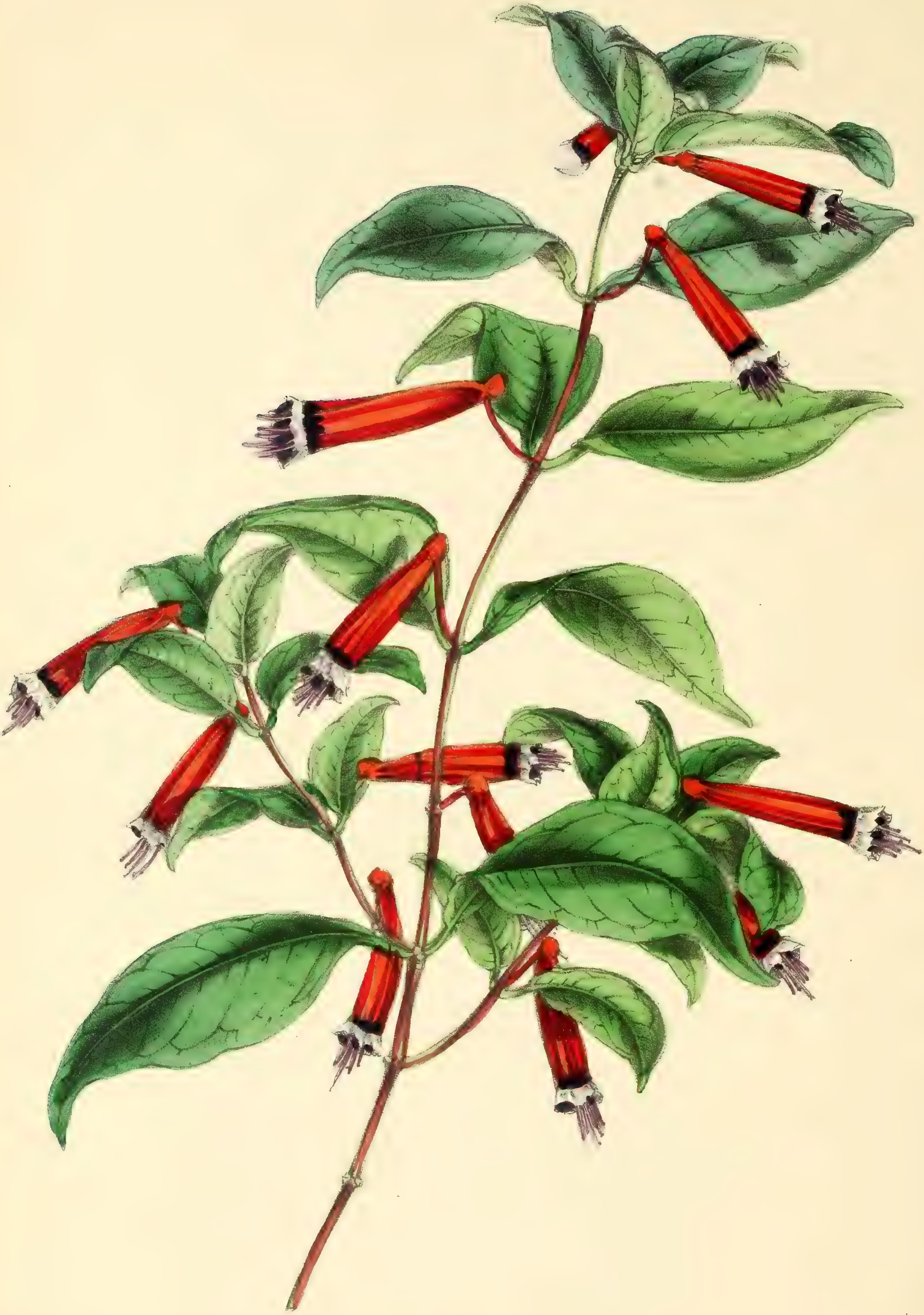
Specific Character. — *Plant* a succulent shrub, evergreen. *Leaves* opposite, appressedly silky above, indistinctly serrate, oblique at the base, with long petioles. *Peduncles* axillary. *Flowers* produced in trichotomous panicles. *Bracts* and *calyx-lobes* ovate. *Corolla* purple, having the interior of the tube yellow, bilamellate above, with two elevated hirsute lines beneath. *Stigma* transversely triangular.—*Hooker.*

We have not met with a more charming thing with which it is at all comparable, through the past year, than this *Chirita* proved itself last summer in a very temperate, close, much-shaded stove, at Messrs. Knight and Perry's, where the drawing our plates are prepared from was completed. Cultural excellence was not sought in the case of the plant to which we allude, but the healthy and free manner in which it grew, the striking abundance of its blossoms, their size and deep bright tints, gave pleasing evidence of how favourable to its welfare the conditions it experienced were.

Messrs. Veitch, of Exeter, favoured us with a specimen from a rather large plant sent to one of the last garden exhibitions of the Horticultural Society, that enabled our artist to make a partial drawing of this plant; but in consequence of the great heat of the season quickly destroying such specimen, the delineation was incomplete till the opportunity mentioned, of finishing it, was afforded. Of the history of the species we have no further intelligence than that which may be found at page 213 of the volume preceding the present. The Island of Ceylon, from whence seeds have been received and raised in this country within this year or two, produces it naturally. When out of flower it is by no means an attractive plant; its branches are succulent, and grow long, sending out few laterals, but they bear towards their apex panicles of beautiful flowers very freely. The foliage is correspondingly fine, and has a singular appearance, from the numerous hairs that closely press the upper surface of each leaf.

We cannot too highly recommend our subject to the attention of cultivators, who will do well to bear in mind the circumstances alluded to, under which it flourished so satisfactorily. Small plants bloom, and specimens may be grown to a large size. A soil similar to that which *Gloxinias*, *Gesneras*, &c., delight in, suits *Chirita Zeylanica.*

The generic name is said to be derived from the vernacular appellation of one of the species.



S. Holden, del & lith.

Cuphea platycentra

CÙPHEA PLATYCÉNTRA.

(Broad-Centred Cuphea.)

Class.
DODECANDRIA.

Order.
MONOGYNIA.

Natural Order.
LYTHRÀCEÆ.

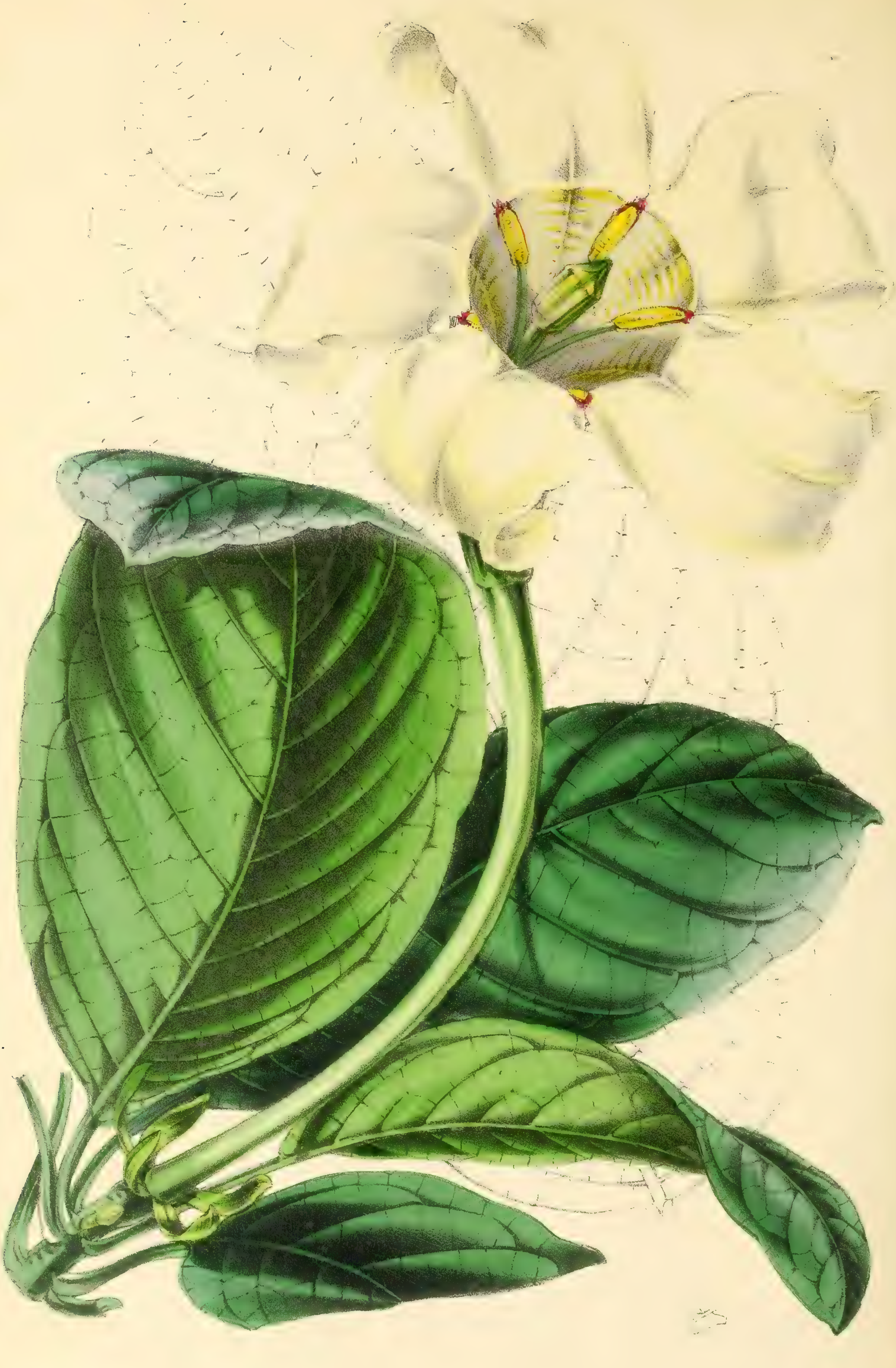
Generic Character.—*Calyx* tubular, gibbose at the base on the upper side; limb wide, twelve-toothed, with six of the teeth erect, and the other six small, or nearly obsolete, rising from the sinuses of the inner teeth. *Petals* six or seven, unequal. *Stamens* eleven to fourteen, rarely six or seven, unequal, inserted in the throat of the calyx. *Gland* under the ovarium thick. *Style* filiform. *Stigma* simple, or rather bifid. *Capsule* membranous, covered by the calyx, one or two-celled, at length cleft by the deflexed placenta as well as the calyx. *Seeds* nearly orbicular, compressed, wingless. —*Don's Gard. and Botany.*

Specific Character.—*Plant* a dwarf evergreen shrub. *Branches* compressed when full-grown. *Leaves* petiolated, ovate, acuminate, slightly scabrous, narrow at the base. *Pedicels* winged, and somewhat longer than the petioles. *Calyx* scarlet, elongate, six-toothed. *Spur* dilated. *Petals* wanting. *Stamens* all quite smooth.—*Benth.*

This *Cuphea* was named and described many years ago by Mr. Bentham, in "*Plantæ Hartwegianæ*," from dried specimens collected in Mexico, but until last year it has been a stranger to our gardens, which possess it through seeds accidentally imported with Mexican *Orchids*, and which sprang up in the establishment of J. Anderson, Esq., the Holme, Regent's Park.

As an excellent and the best addition that has lately been made to our stock of flower-garden plants, *Cuphea platycentra* is very valuable. Its flowers are borne all over the plant by the young branches and branchlets, and are not clustered together in a way that produces a glare of beauty; from which circumstance it may not appear so suitable for the purpose in question as it really is. Where a particularly showy mass of bloom is required, superior things with flowers of a like colour, it is not disputed, may be found; but *C. platycentra* will not lose by comparison with any plant, as far as suitable habitude and profuse long-continued production of pretty inflorescence is concerned. We have too many parterre plants, gay and beautiful enough with flowers for a while, but almost as transitory as gay, and hence too often leaving beds they are placed to occupy nearly devoid of interest, when they should be most interesting. *Cuphea platycentra* is quite appropriate for a small or a large bed, or at least can be rendered so. Its disposition is to form long rather than many shoots; therefore, when left more to itself, it will be most fit for a large mass; and when a small one of it is desired, frequent stopping its branches must be freely resorted to. The practice of the last operation leads to the production of side shoots, which bear blossoms very quickly. The almost perpetual manner in which it flowers directs attention to it as a plant for the greenhouse and mild stove, in the late autumn and early winter months. We can bear testimony to its acceptability and prettiness in these erections at the period spoken of. Seeds, which ripen freely, and cuttings, readily increase the species. Plants flowering in Messrs. Henderson's Nursery, Pine-apple Place, afforded the specimen represented.

Cuphos, curved, alluding to the shape of the capsule, furnishes the generic name



S. Holden del. & lith.

Gardenia Devoniana.

GARDÈNIA DEVONIÀNA.

(Duke of Devonshire's Gardenia.)

Class.
PENTANDRIA.

Order.
MONOGYNIA.

Natural Order.
CINCHONÀCEÆ.

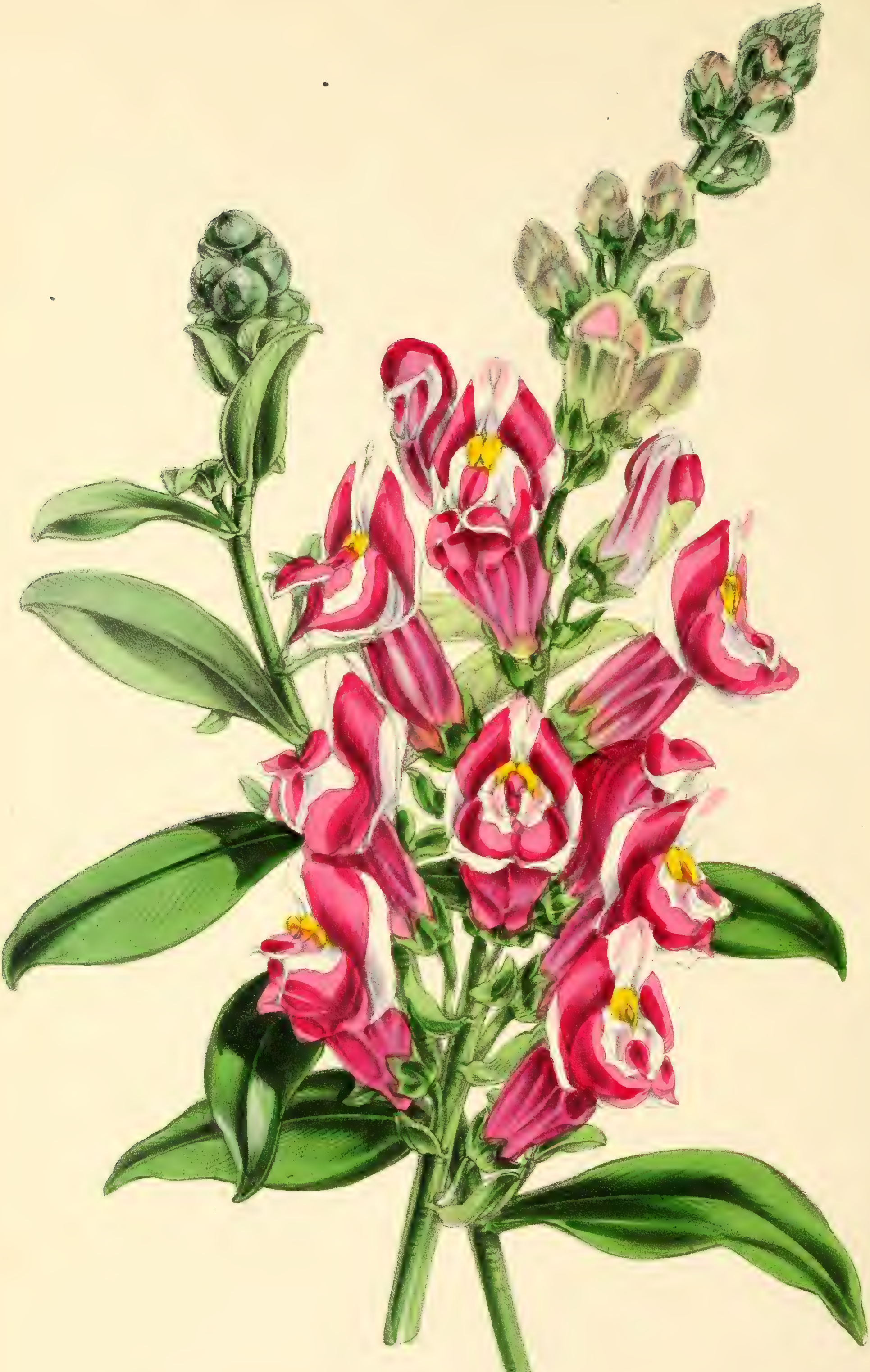
GENERIC CHARACTER.—See page 169.

SPECIFIC CHARACTER.—*Plant* a shrub, evergreen, unarmed. *Leaves* opposite, papyraceous, petiolated, undulated, oblong, acuminate; the younger ones somewhat pilose, retuse, glabrous, axillary, tomentose beneath. *Flowers* solitary, erect, terminal. *Ovarium* pyriform, smooth. *Sepals* linear, spreading, divided to the base. *Corolla* very long; the tube slender, with a campanulate throat, and divided into five obtuse, revolute, oblique, emarginate lobes.—*Lindley.*

WHEN publishing the fine member of this family, *Gardenia Stanleyana*, we had little anticipation of so soon meeting with anything comparable; here, however, we have an ally of it, not only equal, but superior; a native of the same country, introduced to England about the same time, by the same collector; flowered for the first time in September last, and given by the same gentleman who obliged us with *G. Stanleyana.* The last-mentioned species it differs from and surpasses, in having more ample foliage and finer flowers; and the latter are more blossom-like, not possessing a tube of so leathery a texture and aspect, which in the real flower appears as unlike a part of that organ of a plant as it can well be imagined to do. Full development of the blossoms leaves them white, which colour presently changes to that our artist has found them, and for the most part the flower, constituting the subject of the plate, is thus represented. In fragrance, duration, manner and periods of production, the inflorescence of *G. Devoniana* may be looked upon as resembling its congener, already mentioned; as, also, may it in the manner of its increase and requirements under culture.

Beautiful evergreen shrubs, bearing such noble flowers as these *Gardenias* do, cannot fail of becoming universal favorites; and lest it may be thought they require too much room for culturists generally to think of growing them, we may again state, comparatively small plants bloom. Those wishing to produce large specimens may attain their object much sooner by, in addition to giving them a good heat and employing other auxiliaries, removing the flower-buds as they appear; indeed, if plants of considerable dimensions are desired, this step will be a necessary one, so lavish are they of their floral favours.

It of course greatly increases the interest attaching to any plants if they are very successfully grown, but in the instance of those whose character approaches the magnificent, it becomes of much greater importance that they should be well cultivated. Stove genera and species are largely benefited by a continuously maintained genial bottom-heat, applied at the proper season. This circumstance is mentioned here because the *Gardenias* written of are of the description under consideration; and it may be added, because this point in plant culture is not sufficiently attended to.



J. Holden del & Lith.

Antirrhinum majus var Youngiana.

ANTIRRHÌNUM MÀJUS, *var.* YOUNGIÀNUM.

(Mr. Young's Snapdragon.)

Class.
DIDYNAMIA.

Order.
ANGIOSPERMIA.

Natural Order.
SCROPHULARIÀCEÆ.

Generic Character.—*Calyx* in five oblong, permanent segments. *Corolla* ringent; turned or elongated into a spur at the base; upper lip cloven and reflexed; lower obtuse, three-lobed, with an elevated palate, hollow underneath. *Capsule* roundish or oval, obtuse, two-celled, bursting unequally at the summit. *Seeds* numerous, roundish, angular or winged.

Specific Character.—*Plant* perennial, suffruticose, with a leafy, branched stem. *Leaves* opposite or alternate, lanceolate, acute, smooth, entire. *Flowers* in dense clusters, beset with ovate bracts. *Calyx* unequally five-cleft, ovate, concave. *Corolla* with a rounded prominence at the base. *Seeds* black and wrinkled.

Youngianum.—A variety with pale, rosy-purple flowers, striped with white.

The variety of Snapdragon delineated opposite is a fit companion to associate with three or four others of which our pages contain portraits. Perhaps it is less fine than either of those which have preceded it, but, like them, it is worthy of the distinction conferred upon it. From the myriad of other varieties of *A. majus*, it only materially differs in its flowers, and, in this respect, from *A. m. caryophylloides*, at a first glance, it may not be thought very distinct. It, however, is unlike that variety, which, if we may judge from the unfrequency with which our path is crossed by it, is numbered among the things that were, in its flowers being less and having their colours, which are nearly similar, quite reversed in the order of their disposal. A feature in the character of the blossoms, worth particularizing, is that of their having hitherto shown no disposition to sport; nor can they be regarded as having any inclination to do so, since two or three years, the length of time the variety has been in existence, has not overtaken them committing such a fault. The drawing from which the plates are prepared was taken from specimens procured in the nursery of Mr. Young, Epsom, where the variety has arisen, and after whom it is named.

A. m. Youngianum, and similar things, are just the subjects for small gardens, or where little space can be spared for flowers, from their being complete in themselves, and not like plants with self-coloured blossoms, requiring those of an opposite hue to create contrast, and throw into view what would otherwise be comparatively hidden.

It is scarcely requisite to observe, that our plant must be increased by cuttings, if its character is wished to be perpetuated; and better-flowering plants than those are which continue from year to year would be obtained by raising them annually.

Anti, similar, and *rhin*, nose, owing to the resemblance of the flowers of most of the species to the snout of some animal, originates *Antirrhinum*.

FLORICULTURAL NOTICES.

NEW OR INTERESTING RECENTLY FLOWERED AND OTHER PLANTS, IN THE PRINCIPAL METROPOLITAN NURSERIES AND GARDENS.

Centropo'gon Suriname'nsis. Scanty justice has been rendered this plant at page 149, as our readers would have acknowledged had they seen a plant exhibited at the last meeting of the Horticultural Society, in Regent Street, by Mr. Munnock, gardener to the Rev. Charles Pritchard, near two feet high, of proportionate extent in circumference, and bearing twenty-one such clusters of flowers as that which forms the subject of our plate. The plant is deserving of attention for the beauty of its blossoms, let alone their being produced naturally in December, as well as at other seasons. *C. fastuosum* was the name the plant exhibited bore.

Chrysa'nthemum. The Horticultural Society have introduced a pretty variety of this popular flower from China, which bears the name of the Chusan Daisy. Its habit is rather dwarf and it flowers very freely, producing pretty daisy-like blossoms, that are from half to three-quarters of an inch in diameter, double, yellowish in the centre, with rosy-lilac outer petals. It has been abundantly blooming in the Society's garden of late.

Cryptome'ria Japo'nica. This evergreen is, perhaps, among hardy Conifers what the Norfolk Island Pine (*Altingia excelsa*), is to tender. The colour of its foliage is similar, it grows as rapidly, and is much like it in general aspect, but by no means so beautifully regular and handsome. Its main branches proceed alternately from the stem, and, as well as their branchings, droop much more than those of *A. excelsa*. The spine-like leaves are individually similar to *Auraucaria Cunninghami's*, and are disposed in like manner. Naturally *C. Japonica* grows near a hundred feet high, and inhabits the principal Japan Islands. This country possesses it through the Horticultural Society, who have received it from Shanghai, in whose garden are many fine specimens, and through whom most metropolitan establishments have come by it. Synonyme, *Cupressus Japonica*.

Ja'sminum nudiflo'rum. A very gay specimen of this plant was exhibited from the garden of the Horticultural Society, at their rooms, Regent Street, last month. Its slender, leafless branches were covered with large yellow flowers, growing from where the leaves had fallen. If, as was stated at the meeting, it is hardy, a rare novelty is in store for the open garden in winter, nor can the greenhouse afford to despise such an acquisition at the season its flowers expand.

Lysiono'tus longiflo'rus. Under this name Messrs. Veitch sent from Exeter, to the December Regent Street meeting of the Society above mentioned, a plant similar in foliage and manner of growth to *Æschynanthus Roxburghii*, bearing at the axils of the upper leaves of its main shoot, and from the axils of those of an upper lateral one, quite erect flowers. The latter have a small, dark-coloured calyx, with narrow segments, a long, very taper, funnel-shaped, vivid dark crimson corolla, with an arched apex, and much exserted stamens and pistil, of a very bright, light purple hue.

Onci'dium. J. W. Schröder, Esq., Stratford, Essex, has lately flowered a very fine member of this genus, with roundish pseudo-bulbs, and narrow rather short foliage. The flowers are produced in a panicle little disposed to branch, on rather long stalks, and have linear-lanceolate sepals, rather broader petals, both three-quarters of an inch long, yellowish, banded and spotted with brown, and a remarkably fine, large, at first bright-yellow, but soon becoming whitish, leathery lip, which has a long claw, at whose base is a small lobe on each side, and on its upper surface a channelled protuberance. The outer portion of the lip approaches an oblong shape, and in the largest flowers is an inch and a half long by one wide. We understand the species is from Vera Cruz.

OPERATIONS FOR JANUARY.

This month may be one of great activity with the culturist, or furnish him little more occupation than the two or three which have preceded it. The business requiring attention is not momentous nor formidable in extent; but much may be done that will lessen after toils, and lighten the burden of spring-work. The outset of the new year brings a return of the period when Orchids must have a general potting ; by general, we mean of course, that the majority of a collection being about to commence a new growth, they will be in a fit state to pot, or be treated in a manner equivalent to that operation being performed. It is best not to interfere with any but those which are awaking from repose ; and in dealing with them we would recommend that plants of medium size, as being the most interesting, have the greatest share of encouragement given them ; for splendid as are large specimens when in bloom, they are not the most attractive in any other state, and certainly cannot be so conveniently accommodated nor easily managed, as smaller ones. Let the increase of temperature and humidity in the Orchid house be gradual, and the additional supply of water to the plants, especially newly-potted ones, cautiously administered. An occasional dressing with the syringe or hand-engine, on a fine day, should not be forgotten, and the utmost vigilance ought to be in exercise for the destruction of insects among the family. Many stove plants will require potting in the course of the month, and probably some from the greenhouse also. In addition to a higher temperature being maintained in the former erection, and everything kept fresh and sweet, no opportunity of seeking to eradicate insects should be lost ; their multiplication is apt to be as rapid as the growth of the plants, on the introduction of a growing temperature. Propagation by cuttings, suckers, division, &c., as plants form new shoots, will require attending to ; and seeds of many exotics may be put in, as also those of some annuals to flower early in spring, both in pots and in the open ground. The increase of flower-garden plants must continue to be prosecuted as circumstances may require. Any placed in gentle warmth will soon supply abundance of cuttings.

The degrees of watchfulness required to be kept in exercise, and the measures to be taken for the preservation of plants, will necessarily depend upon the state of the weather. Enough will have been done, there is little doubt, owing to the wintry experience of the past month having been regarded as an earnest of what might be expected ere the season is passed through, to secure tender plants under all circumstances, from harm by frost ; and it is necessary to make sufficient provision, but it is better to aim at producing in tender things, especially those wholly in the open air, the capability to bear cold, rather than have recourse to extraordinary means for warding it off. If mildness in the weather prevail, it must not be looked upon as trouble to undo a great deal that may have been done for the protection of plants, that they may be exposed and kept dormant. In giving this direction, we are not forgetting there are instances in which plants are prevented from commencing to grow at an improper time by being protected from mildness of season, and therefore it may occur that this kind of harm has to be guarded against. Though it may not have been necessary to fortify much against cold up to this date, everything employable, to shield from its effects, should not have to be got in readiness, neither must it be forgotten that it will be wisdom to hold it so.

The flower-forcer has begun to reap the reward of his labours, by having many plants in flower now. He must continue to have those things committed to his care experience has taught are best for producing flowers. Some of the inmates of the stove and greenhouse, whose blooming season is at hand, may be given in his charge to be gently brought forward. Do not forget to treat as they deserve plants cheering this time of year by blooming without assistance.

In the open air do anything that can be done. Attend to valuable hardy perennials: Carnations, Auriculas, and such things, simply require to be kept dormant and free from vermin, whose attacks they are liable to.

ERRATA.—From " provide appendages," fourth line from the bottom, page 18, go to " for the reception of water," line eighteen from the top of the next page, which, with what succeeds as far as " the consideration," last line, page 19, and first on page 20, should precede " of this last subject," fourth line from the bottom, page 18, and what follows.

In the specific character of *Eriostemon scabrum*, page 127, for *Leaves* " many-veined," read " many curved."

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